

MLAAP PART A & B PERMIT APPLICATION
SUBPART X APPLICATION

MILAN ARMY AMMUNITION PLANT
MILAN, TENNESSEE

Volume 1 of 1
Sections A to O
&
Appendices

Prepared for:



U.S. Army
Milan Army Ammunition Plant
2280 Highway 104, Suite 1
Milan, Tennessee 38358

Prepared by:



American Ordnance

We do what we say.®

American Ordnance LLC
Milan Army Ammunition Plant
2280 Highway 104, Suite 1
Milan, Tennessee 38358

November 2025

**MLAAP PART A & B PERMIT APPLICATION
SUBPART X APPLICATION**

**MILAN ARMY AMMUNITION PLANT
MILAN, TENNESSEE**

**Volume 1 of 1
Sections A to O & Appendices**

Prepared for:



**U.S. Army
Milan Army Ammunition Plant
2280 Highway 104, Suite 1
Milan, TN 38358-3176**

Prepared by:



**American Ordnance LLC
Milan Army Ammunition Plant
2280 Highway 104, Suite 1
Milan, TN 38358**

November 2025



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
MILAN ARMY AMMUNITION PLANT
PO Box 509
MILAN, TENNESSEE 38358-3176

JMML-CR

November 4, 2025

Subject: RCRA Subpart X Permit Renewal Application for Milan Army Ammunition Plan, EPA ID
Number TN0210020582

Tennessee Department of Environment and Conservation
Division of Solid Waste Management
Attention: Brett Harris
Davy Crockett Tower, 7th Floor
500 James Robertson Parkway
Nashville, TN 37243

Dear Mr. Harris,

Milan Army Ammunition Plant is pleased to provide the RCRA Subpart X permit renewal application for the treatment of hazardous waste in its miscellaneous thermal treatment unit, the Ammunition Destruction Area. The intent of this permit renewal application is to gain a permit to be able to conduct closure activities at the Ammunition Destruction Area, which will include the treatment of explosive and explosive contaminated munitions components.

This permit renewal application relies heavily on the language provided in the 2010-2011 permit application which was approved to create hazardous waste permit TNHW-153. As such, MLAAP has conducted a red-line strike-through to clearly identify changes between this application and the 2010-2011 permit application. All payments for fees associated with this application are being sent to TDEC's Division of Fiscal Services.

Enclosed is the signed original Part A & B application with 4 hard clean copies and 2 hard red-line strike-through copies. Digital copies will be sent via DoD SAFE.

We appreciate your attention to this matter. If you have any questions, require any additional information, or clarification, please direct any questions to Mr. Shelby Staten, 731-686-6160.

Sincerely,

Thomas Nowell
Commander's Representative

Enclosures

cc: Clift Jeter, DSWM Jackson Field Office
Beverly Philpot, DSWM



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
MILAN ARMY AMMUNITION PLANT
PO Box 509
MILAN, TENNESSEE 38358-3176

JMML-CR

November 4, 2025

Subject: Check Submittal for Fees Associated with RCRA Subpart X Permit Renewal Application for
Milan Army Ammunition Plant, EPA ID Number TN0210020582

Tennessee Department of Environment and Conservation
Division of Fiscal Services
Attention: Treasurer, State of TN
Davy Crockett Tower, 6th Floor
500 James Robertson Parkway
Nashville, TN 37243

To Whom it May Concern,

Milan Army Ammunition Plant is pleased to provide the check for fees associated with its RCRA Subpart X permit renewal application for the treatment of hazardous waste in its miscellaneous thermal treatment unit, the Ammunition Destruction Area. The permit renewal application is being sent to the Division of Solid and Hazardous Waste Management for their review and processing.

We appreciate your attention to this matter. If you have any questions, require any additional information, or clarification, please direct any questions to Mr. Shelby Staten, 731-686-6160.

Sincerely,

A handwritten signature in blue ink, appearing to read "T. Nowell", is positioned above the printed name.

Thomas Nowell
Commander's Representative

Enclosures

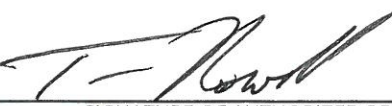


RESET ENTIRE FORM

DATE FILED

11/4/2025

EPA ID TN0210020582		SITE, BUSINESS, OR INSTALLATION NAME Milan Army Ammunition Plant			
CONTACT PERSON LAST NAME Nowell		FIRST NAME Thomas	PHONE 7316866884	FAX	E-MAIL thomas.s.nowell.civ@army.mil
NON PERMITTED FACILITY	SITE ACTIVITY		PERMITTED FACILITY		PERMIT NUMBER(S)
☐ APPLYING FOR PERMIT	STORAGE	☐ ON-SITE	☐ COMMERCIAL	☐ INTERIM STATUS	ENTER ONLY PERMIT NUMBERS THAT APPLY TO THIS FORM
☒ PERMIT RENEWAL	TREATMENT	☒ ON-SITE	☐ COMMERCIAL	☒ FULLY PERMITTED	TN0210020582
☐ GENERATOR	DISPOSAL	☐ ON-SITE	☐ COMMERCIAL	☐ CORRECTIVE ACTION	
☐ OTHER	LANDFILL	☐ ON-SITE	☐ COMMERCIAL	☐ CLOSURE / POST CLOSURE	
				☐ OTHER ENFORCEABLE	
CALCULATING YOUR FEES		DOCUMENT			
IF FILING A SINGLE APPLICATION WITH TWO OR MORE TYPES OF UNITS, COMPUTE YOUR TOTAL BY USING THE HIGHER FEE (OR JUST ONE SET) FOR THAT APPLICATION. EXAMPLE: IF YOU HAVE STORAGE AND DISPOSAL, THE HIGHER PART B FEE APPLIES. 1) SELECT >> "EXISTING" OR "NEW" PART A FEE 2) SELECT >> "ON-SITE" OR "COMMERCIAL" DISPOSAL PART B FEE					
APPLICATION TYPE		TYPE OF FEE	FEE AMOUNT	# APPLYING FOR	LINE TOTAL
GROUP TOTAL					
STORAGE		☐ EXISTING FACILITY	\$600	0	0.00
		☐ NEW FACILITY	\$2,800	0	0.00
		☐ ON-SITE	\$15,000	0	0.00
		☐ COMMERCIAL	\$37,500	0	0.00
					\$ 0.00
					514
TREATMENT		☒ EXISTING FACILITY	\$600	1	600.00
		☐ NEW FACILITY	\$2,800	0	0.00
		☒ ON-SITE	\$15,000	1	15,000.00
		☐ COMMERCIAL	\$37,500	0	0.00
					\$ 15,600.00
					516
DISPOSAL		☐ EXISTING FACILITY	\$600	0	0.00
		☐ NEW FACILITY	\$2,800	0	0.00
		☐ ON-SITE	\$30,000	0	0.00
		☐ ON-SITE LANDFILL	\$30,000	0	0.00
		☐ COMMERCIAL DISPOSAL	\$75,000	0	0.00
		☐ COMMERCIAL LANDFILL	\$75,000	0	0.00
					\$ 0.00
					511
POST CLOSURE		☐ EXISTING FACILITY	\$600	0	0.00
		☐ NEW FACILITY	\$2,800	0	0.00
		☐ PREV PERMITTED UNDER OPERATING PERMIT	\$15,000	0	0.00
		☐ Not prev permitted under operating permit	\$30,000	0	0.00
					\$ 0.00
					548
CORRECTIVE ACTION		☐ EXISTING FACILITY	\$600	0	0.00
		☐ NEW FACILITY	\$2,800	0	0.00
		☐ APPLICATION	\$15,000	0	0.00
					\$ 0.00
					547
OTHER		☐ EMERGENCY PERMIT	\$2,400	0	0.00
		☐ R D and D	☐ R D and D RENEWAL	\$2,800	0
					\$ 0.00
					516
CLOSURE POST-CLOSURE PLAN REVIEWS		☐ CLOSURE / POST CLOSURE PLAN REVIEW	\$2,800	0	0.00
		☐ CLASS 1 MODIFICATION OF PLAN	\$300	0	0.00
		☐ CLASS1 1 MODIFICATION OF PLAN	\$850	0	0.00
		☐ CLASS 2 MODIFICATION OF PLAN	\$1,100	0	0.00
		☐ CLASS 3 MODIFICATION OF PLAN	\$1,700	0	0.00
					\$ 0.00
					548

EPA ID TN0210020582		SITE, BUSINESS, OR INSTALLATION NAME Milan Army Ammunition Plant			
APPLICATION TYPE	TYPE OF FEE	FEE AMOUNT	# APPLYING FOR	LINE TOTAL	GROUP TOTAL
PERMIT MODIFICATION	☐ CLASS 1	\$600	0	0.00	\$ 0.00 513
	☐ CLASS 1	\$4,200	0	0.00	
	☐ CLASS 1 OWNER/OPERATOR CHANGE	\$3,800	0	0.00	
	☐ CLASS 1 M.A.C.T.	\$8,000	0	0.00	
	☐ CLASS 2 Container, tank, drip pad storage and / or treatment unit or thermal treatment unit	\$9,700	0	0.00	
	☐ CLASS 2 Disposal unit; waste pile storage unit; containment bldg.; surface impoundment; and/or treatment unit or other miscellaneous unit	\$12,500	0	0.00	
	☐ CLASS 2 POST CLOSURE UNIT	\$15,000	0	0.00	
	☐ CLASS 3 Container, tank, drip pad storage and / or treatment unit or thermal treatment unit	\$15,000	0	0.00	
	☐ CLASS 3 Disposal unit; waste pile storage unit; containment bldg.; surface impoundment; and/or treatment unit or other miscellaneous unit	\$30,000	0	0.00	
	☐ CLASS 3 FINAL REMEDIES UNDER CORRECTIVE ACTION	\$15,000	0	0.00	
	☐ CLASS 3 POST CLOSURE UNIT	\$20,000	0	0.00	
	☐ TEMPORARY AUTHORIZATION	\$3,000	0	0.00	
	☐ TEMPORARY AUTHORIZATION RENEWAL	\$300	0	0.00	
	BURN AND / OR ASSESSMENT REVIEW	☐ TRIAL BURN EACH TYPE OF UNIT	\$11,700	0	
☐ RISK BURN PLAN EACH TYPE OF UNIT		\$11,700	0	0.00	
☐ CERTIFICATE OF COMPLIANCE EACH UNIT		\$5,000	0	0.00	
☐ FACILITY RISK ASSESSMENT AND/OR RISK EVALUATION PLAN FOR A LAND BASED UNIT		\$11,700	0	0.00	
☐ FACILITY RISK ASSESSMENT AND/OR RISK EVALUATION PLAN FOR COMBUSTION UNIT		\$11,700	0	0.00	
☐ INITIAL DISPERSION MODEL AND DIRECT HUMAN HEALTH RISK ASSESSMENT		\$11,700	0	0.00	
☐ PERIODIC MODELING AND DIRECT HUMAN HEALTH RISK ASSESSMENT		\$5,850	0	0.00	
OTHER REVIEWS	☐ VARIANCE OR WAIVER REQUEST	\$3,000	0	0.00	\$ 0.00 576
	☐ VARIANCE OR WAIVER REQUEST RENEWAL	\$650	0	0.00	
	☐ CHROMIUM EXCLUSION EACH Cr WASTE STREAM	\$2,500	0	0.00	
	☐ CONTAINED-IN DETERMINATION	\$500	0	0.00	
REGULATORY REVIEW	☐ OFFICIAL WRITTEN REGULATORY INTERPRETATION REQUEST PER HOUR	\$50	0	0.00	\$ 0.00 577
CONSTRUCTION INSPECTION FEES *APPLIES ALSO TO NEWLY PERMITTED UNITS NOT YET CONSTRUCTED PAYABLE PRIOR TO CONSTRUCTION	☐ CLASS 1 MOD STORAGE UNIT	\$300	0	0.00	\$ 0.00 604
	☐ CLASS 1 MOD TREATMENT, DISPOSAL, POST CLOSURE	\$550	0	0.00	
	☐ CLASS 1 MOD STORAGE UNIT	\$1,300	0	0.00	
	☐ CLASS 1 MOD TREATMENT, DISPOSAL, POST CLOSURE	\$2,700	0	0.00	
	☐ CLASS 2 MOD STORAGE UNIT	\$2,000	0	0.00	
	☐ CLASS 2 MOD TREATMENT, DISPOSAL, POST CLOSURE	\$4,000	0	0.00	
	☐ CLASS 3 MOD STORAGE UNIT	\$2,700	0	0.00	
	☐ CLASS 3 MOD TREATMENT, DISPOSAL, POST CLOSURE	\$5,350	0	0.00	
			TOTAL PAY THIS AMOUNT	\$15,600.00	
SUM GROUP TOTALS Pg 1 and 2					
MAKE PAYABLE TO: "TREASURER, STATE OF TENNESSEE"					
 SIGNATURE OF AUTHORIZED REPRESENTATIVE		Thomas S. Nowell, Commander's Representative PRINTED NAME and TITLE		11/4/2025 DATE	

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Attention: Treasurer, State of TN
Davy Crockett Tower, 6th Floor
500 James Robertson Parkway
Nashville, TN 37243

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Instructions

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ACRONYMS

ADA	Ammunition Destruction Area
AO	American Ordnance LLC
BEM	Buried Explosion Module
Bgl	Below ground level
BG	Burning Ground
Bgs	Below ground surface
CBT	Computer-Based Training
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COCs	Contaminants of Concern
CPS	Cycles Per Second
CWA	Clean Water Act
DDT	Deflagration to Detonation Transition Test
DNL	Day-Night Sound Level
DOD	Department of Defense
DoDAC	Department of Defense Ammunition Code
DOE	Department of Energy
DOT	Department of Transportation
DNB	Dinitrobenzene
EHS	Environmental, Health, & Safety
EMS	Emergency Medical Service
EMT	Emergency Medical Technician
EOD	Explosive Ordnance Disposal
EP	Extraction Procedure
EWTF	Explosive Waste Transfer Facility
FFA	Federal Facility Agreement
GED	General Education Degree
GOCO	Government Owned Contractor Operated
HAZCOM	OSHA Hazard Communication Standard
HAZMAT	Hazardous Material
HDPE	High Density Polyethylene
HMX	Cyclotetramethylene tetranitramine
ICUZ	Installation Compatible Use Zone
ILT	Instructor-Led Training
IROD	Interim Record of Decision
ISRT	Incidental Spill Response Team
ISOC	Installation On-Scene Coordinator
IWTF	Industrial Waste Treatment Facility
LAP	Loading, Assembly, and Packing

LUCs	Land Use Controls
MDAS	Material Documented As Safe
MDEH	Material Documented as an Explosive Hazard
MIDAS	Munitions Items Disposition Action System
MLAAP	Milan Army Ammunition Plant
MOD	Milan Ordnance Depot
MPPEH	Material Potentially Presenting an Explosive Hazard
MSDS	Material Safety Data Sheet
MTTUs	Miscellaneous Thermal Treatment Units
Mg/kg	Milligram per Kilogram
Mg/L	Milligram per Liter
NEW	Net Explosive Weight
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRHP	National Register of Historic Places
NRIS	National Register Information System
OB	Open Burning
OD	Open Detonation
OJT	On-the-job training
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PAO	Public Affairs Office
PCB	Polychlorinated biphenyls
PEP	Propellants, Explosives, and Pyrotechnics
PPE	Personal Protective Equipment
PPMW	Parts per Million by Weight
PVC	Polyvinyl Chloride
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RDX	Cyclotrimethylene trinitramine
ROD	Record of Decision
RI/FS	Remedial Investigation/Feasibility Study
RQ	Reportable Quantity
RSLs	Regional Screening Levels
SPR	Spill Prevention & Response
SOPs	Standard Operating Procedures
SMWUs	Solid Waste Management Units
SW	Surface Water
SWPPP	Storm Water Pollution Prevention Plan
TDEC	Tennessee Department of Environmental Conservation
TCLP	Toxicity Characteristic Leaching Procedure
TEMA	Tennessee Emergency Management Agency

THWMR	Tennessee Hazardous Waste Management Regulations
TNB	1,3,5-Trinitrobenzene
TNT	Trinitrotoluene
TOC	Total Organic Compounds
TPH	Total Petroleum Hydrocarbons
TSD	Treatment, Storage, and Disposal
TSS	Total Suspended Solids
UST	Underground Storage Tank
USEPA	United States Environmental Protection Agency
USADAC	U.S. Army Defense Ammunition Center
UXO	Unexploded Ordnances
WAP	Waste Analysis Plan
WBT	Web-Based Training
WMA	Waste Management Area

CHECKLIST FOR TECHNICAL REVIEW OF RCRA PART B PERMIT APPLICATION FOR SUBPART X UNITS

Regulatory Reference	Description	Location of Information in Application	Addressed	Technically Adequate (Yes/No)	Notes
40 CFR 270.13 TN Rule 0400-12-01-.07(4)(a)	PART A INFORMATION GENERAL INFORMATION REQUIREMENTS	--	--	--	
40 CFR 270.13 (a) and (m) TN Rule 0400-12-01-.07(4)(a)(1)	Activities conducted which require facility to obtain a permit under RCRA and brief description of nature of the business.	Section A; Section B	Yes		
40 CFR 270.13 (b) and (l) TN Rule 0400-12-01-.07(4)(a)(2) and (6)	Name, mailing address, and location of facility for which the application is submitted including a topographic map extending one mile beyond property boundaries. Topographic map will depict each intake and discharge structure; each hazardous waste treatment, storage, or disposal facilities; each well for underground injection; wells, springs or surface water bodies, and drinking water wells listed in public records or otherwise known to the applicant within ¼ mile of the facility property boundary.	Section A- RCRA subtitle C Site ID Form, Items 3, 4, and 5; Figures A-1, A-2, A-3, A-4a, and A-4b	Yes		
40 CFR 270.13 (c) TN Rule 0400-12-01-.07(4)(a)(3)	Up to four Standard Industrial Classification (SIC) Codes which best reflect the products or services provided by the facility.	Section A- RCRA subtitle C Site ID Form, Item 7	Yes		
40 CFR 270.13 (d) and (e) TN Rule 0400-12-01-.07(4)(a)(4) and (9)	Operator/owner's name, address, telephone number, and ownership status as Federal, State, private, public, or other entity.	Section A- RCRA subtitle C Site ID Form, Item 9	Yes		
40 CFR 270.13(k) TN Rule 0400-12-01-.07(4)(a)(5)	Listing of all permits or construction approvals received or applied for by this facility under any of the following programs: underground injections, point source discharges to WOTS/WOTUS, emissions to air, discharges of dredge or fill material to WOTS/WOTUS, other relevant environmental permit programs	Section A- Hazardous Waste Permit Part A Form, Item 4.	Yes		
TN Rule 0400-12-01-.07(4)(a)(7)	Brief description of the nature of the business	Section A- Hazardous Waste Permit Part A Form, Item 5; Section B	Yes		
TN Rule 0400-12-01-.07(4)(a)(8)	Latitude and Longitude of the Facility	Section A- RCRA subtitle C Site ID Form, Item 4	Yes		
TN Rule 0400-12-01-.07(4)(a)(9)	Name, address, and telephone number of the owner of the facility	Section A- RCRA subtitle C Site ID Form, Item 9	Yes		

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Checklist for Technical Review of RCRA Part B Permit Application for Subpart X Units
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Regulatory Reference	Description	Location of Information in Application	Addressed	Technically Adequate (Yes/No)	Notes
40 CFR 270.13 (f) and (g) TN Rule 0400-12-01-.07(4)(a)(10)	Facility is new, existing, or whether it is a first or revised application	Section A; Section A- Hazardous Waste Permit Part A Form, Item 3	Yes		
TN Rule 0400-12-01-.07(4)(a)(11)	For existing facilities, a scale drawing of the facility showing the location of past, present, and future treatment, storage, and disposal areas.	Figure A-3	Yes		
TN Rule 0400-12-01-.07(4)(a)(12)	For existing facilities, photographs of the facility clearly delineating all existing structures; existing treatment, storage, and disposal areas; and sites of future treatment, storage, and disposal areas	Section A-2 Site Photographs	Yes		
40 CFR 270.13 (i) TN Rule 0400-12-01-.07(4)(a)(13)	Description of processes to be used for treating, storing, and disposing of hazardous waste, and the design capacity for these items	Section A- Hazardous Waste Permit Part A Form, Item 6; Section D	Yes		
40 CFR 270.13 (j) TN Rule 0400-12-01-.07(4)(a)(14)	Specification of the hazardous wastes listed or designated under Rule 0400-12-01-.02 (40CFR261) to be treated, stored, or disposed of annually, and a general description of the processes to be used for such wastes.	Section A- Hazardous Waste Permit Part A Form, Item 7; Sections C and D	Yes		
TN Rule 0400-12-01-.07(4)(a)(15)	For hazardous debris, a description of the debris category(ies) and contaminant category(ies) to be treated, stored, or disposed of at the facility.		N/A		Not Applicable
TN Rule 0400-12-01-.07(4)(b)	Required Form: Part A permit applications must be submitted on forms provided by the Department and completed as per the accompanying instructions. (Note: The Part A permit application information requirements as stated in this paragraph are substantially equivalent to those similarly required by EPA under 40 CFR 270.10 and 270.13. Thus, copies of the EPA Part A permit application submitted to EPA will, if properly completed, suffice as the copies of the Part A permit application required by this paragraph.)	Section A	Yes		
40 CFR 270.28 TN Chapter 0400-12-01-.07(5)	PART B GENERAL INFORMATION REQUIREMENTS FOR PART B PERMITS* The content of the Part B Permit Application consists of the general information requirements of the rule and the specific information requirements in paragraphs (5) and (6) of the rule applicable to this facility. Certain technical data such as engineering design drawings shall be certified by a qualified Registered Professional Engineer.	--	--	--	
40 CFR 270.14(b)(1) TN Rule 0400-12-01-.07(5)(a)(1)(i)	General description of the facility	Section B	Yes		
40 CFR 270.14(b)(2) TN Rule 0400-12-01-	Chemical and physical analysis of the hazardous waste and hazardous debris to be handled at the facility. At a minimum, these analyses shall contain all the information	Section C and App. C-1	Yes		

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Regulatory Reference	Description	Location of Information in Application	Addressed	Technically Adequate (Yes/No)	Notes
.07(5)(a)(1)(ii)	which must be known to treat, store, or dispose of the wastes properly in accordance with Rule 0400-12-01-.06.				
40 CFR 270.14(b)(3) TN Rule 0400-12-01-.07(5)(a)(1)(iii)	A copy of the waste analysis plan required by Rule 0400-12-01-.06(2)(d)2 and, if applicable Rule 0400-12-01-.06(2)(d)3.	Section C; App. C-1	Yes		
40 CFR 270.14(b)(4) TN Rule 0400-12-01-.07(5)(a)(1)(iv)	Description of the security procedures and equipment required by Rule 0400-12-01-.06(2)(e) (40 CFR 264.24) or a justification demonstrating reasons for requesting a waiver of this requirement.	Section B-2 (c), B-5(c),Section E-1	Yes		
40 CFR 270.14(b)(5) TN Rule 0400-12-01-.07(5)(a)(1)(v)	A copy of the general inspection schedule required by Rule 0400-12-01-.06(2)(f)2 (264.15(b)). Include, where applicable as part of the inspection schedule, specific requirements in Rules 0400-12-01-.06(9)(e), (10)(d)9, (10)(f), (11)(g), (12)(e), (13)(d), (14)(d), (27)(c), (30)(d), (31)(c), (31)(d), (31)(i), (32)(e), (32)(f), (32)(g), and (32)(i).	Section F and Appendix F-1	Yes		
40 CFR 270.14(b)(6) TN Rule 0400-12-01-.07(5)(a)(1)(vi)	Justification of any request for (a) waiver(s) of preparedness and prevention requirements of Rule 0400-12-01-.06(3) (Part 265 Subpart C)	Not Applicable. Statement in Section E-3	Yes		No waiver requested
40 CFR 270.14(b)(7) TN Rule 0400-12-01-.07(5)(a)(1)(vii)	A copy of the contingency plan required by Rule 0400-12-01-.06(4). Note: Include, where applicable, as part of the contingency plan, specific requirements in Rules 0400-12-01-.06(11)(h) and (12)(f)	Section G	Yes		Proposed updates have been made.
40 CFR 270.14(b)(8) TN Rule 0400-12-01-.07(5)(a)(1)(viii)	A description of procedures, structures, or equipment used at the facility to: (I) prevent hazards in unloading operations (for example, ramps, special forklifts); (II) prevent runoff from hazardous waste handling areas to other areas of the facility or environment or to prevent flooding (for example, berms, dikes, trenches); (III) prevent contamination of water supplies; (IV) mitigate effects of equipment failure and power outages; (V) prevent undue exposure of personnel to hazardous waste (for example, protective); and (VI) prevent releases to atmosphere.	Section E-3	Yes		
40 CFR 270.14(b)(9) TN Rule 0400-12-01-.07(5)(a)(1)(ix)	A description of precautions to prevent accidental ignition or reaction of ignitable, reactive, or incompatible waste.	Section E-4	Yes		
40 CFR 270.14(b)(10) TN Rule 0400-12-01-.07(5)(a)(1)(x)	Traffic pattern, estimated volume (number, types of vehicles) and control (for example, show turns across traffic lanes, and stacking lanes [if appropriate]; describe access road surfacing and load bearing capacity; show traffic control signals).	Section B-5	Yes		
40 CFR 270.14(b)(11) TN Rule 0400-12-01-.07(5)(a)(1)(xi)	Facility location information:	Section B-4	Yes		
TN Rule 0400-12-01-.07(5)(a)(1)(xi)(I)	In order to determine the applicability of the seismic standard [Rule 0400-12-01-.06(2)(i)1] the owner or operator of a new facility must identify the political jurisdiction (e.g., county, township, or election district) in which the facility is proposed to be located. (Comment: If the county or election district is not listed in Appendix VI of Rule 0400-12-01-.06, no further information is required to demonstrate compliance with Rule 0400-12-01-.06(2)(i)1.)	Section B-4(a)	Yes		Seismic standards do not apply given site's political jurisdiction.
TN Rule 0400-12-01-.07(5)(a)(1)(xi)(II)	If the facility is proposed to be located in an area listed in Appendix VI of Rule 0400-12-01-.06, the owner or operator shall demonstrate compliance with the seismic standard. This demonstration may be made using either published geologic data or data obtained from field investigations carried out by the applicant. The information	N/A	N/A		Not Applicable

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Regulatory Reference	Description	Location of Information in Application	Addressed	Technically Adequate (Yes/No)	Notes
	provided must be of such quality to be acceptable to geologists experienced in identifying and evaluating seismic activity. The information submitted must show that either:				
TN Rule 0400-12-01-.07(5)(a)(1)(xi)(II)(I)	No faults which have had displacement in Holocene time are present, or no lineations which suggest the presence of a fault (which have displacement in Holocene time) within 3,000 feet of a facility are present, based on data from: A. Published geologic studies, B. Aerial reconnaissance of the area within a five-mile radius from the facility, C. An analysis of aerial photographs covering a 3,000 foot radius of the facility, and D. If needed to clarify the above data, a reconnaissance based on walking portions of the area within 3,000 feet of the facility, or	N/A	N/A		Not Applicable
TN Rule 0400-12-01-.07(5)(a)(1)(xi)(II)(II)	If faults (to include lineations) which have had displacement in Holocene time are present within 3,000 feet of a facility, no faults pass within 200 feet of the portions of the facility where treatment, storage, or disposal of hazardous waste will be conducted, based on data from a comprehensive geologic analysis of the site. Unless a site analysis is otherwise conclusive concerning the absence of faults within 200 feet of such portions of the facility data shall be obtained from a subsurface exploration (trenching) of the area within a distance no less than 200 feet from portions of the facility where treatment, storage, or disposal of hazardous waste will be conducted. Such trenching shall be performed in a direction that is perpendicular to known faults (which have had displacement in Holocene time) passing within 3,000 feet of the portions of the facility where treatment, storage, or disposal of hazardous waste will be conducted. Such investigation shall document with supporting maps and other analyses, the location of faults found. (Comment: The Guidance Manual for the Location Standards provides greater detail on the content of each type of seismic investigation and the appropriate conditions under which each approach or a combination of approaches would be used.)	N/A	N/A		Not Applicable
TN Rule 0400-12-01-.07(5)(a)(1)(xi)(III)	Owners and operators of all facilities shall provide an identification of whether the facility is located within a 100-year floodplain. This identification must indicate the source of data for such determination and include a copy of the relevant Federal Insurance Administration (FIA) flood map, if used, or the calculations and maps used where an FIA map is not available. Information shall also be provided identifying the 100-year flood level and any other special flooding factors (e.g., wave action) which must be considered in designing, constructing, operating, or maintaining the facility to withstand washout from a 100-year flood.	Figures B-13a and B-13b; Section B-4(b)	Yes		MLAAP is not in 100-year floodplain.
TN Rule 0400-12-01-.07(5)(a)(1)(xi)(IV)	Owners and operators of facilities located in the 100-year floodplain must provide the following information: I. Engineering analysis to indicate the various hydrodynamic and hydrostatic forces expected to result at the site as consequence of a 100-year flood II. Structural or other engineering studies showing the design of operational units (e.g., tanks, incinerators) and flood protection devices (e.g., floodwalls, dikes) at the facility and how these will prevent washout.	N/A	N/A		Not Applicable

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Regulatory Reference	Description	Location of Information in Application	Addressed	Technically Adequate (Yes/No)	Notes
	III. If applicable, and in lieu of subitems I and II of this item, a detailed description of procedures to be followed to remove hazardous waste to safety before the facility is flooded, including: a. Timing of such movement relative to flood levels, including estimated time to move the waste, to show that such movement can be completed before floodwaters reach the facility. b. A description of the location(s) to which the waste will be moved and demonstration that those facilities will be eligible to receive hazardous waste in accordance with the regulations under Rules 0400-12-01-.05 through .07 and .09. c. The planned procedures, equipment, and personnel to be used and the means to ensure that such resources will be available in time for use. d. The potential for accidental discharges of the waste during movement.				
TN Rule 0400-12-01-.07(5)(a)(1)(xi)(V)	Existing facilities NOT in compliance with Rule 0400-12-01-.06(2)(i)2 shall provide a plan showing how the facility will be brought into compliance and a schedule for compliance	N/A	N/A		Not Applicable as MLAAP is in compliance.
40 CFR 270.14(b)(12) TN Rule 0400-12-01-.07(5)(a)(1)(xii)	Outline of introductory and continuing training programs by owners or operators to prepare persons to operate or maintain the HWM facility in a safe manner as required to demonstrate compliance with Rule 0400-12-01-.06(2)(g). A brief description of how training will be designed to meet actual job tasks in accordance with requirements in Rule 0400-12-01-.06(2)(g)1(iii)	Section H	Yes		
40 CFR 270.14(b)(13) TN Rule 0400-12-01-.07(5)(a)(1)(xiii)	A copy of the closure plan and, where applicable, the post-closure plan required by Rule 0400-12-01-.06(7)(c), (7)(i) and (10)(h). Include, where applicable, as part of the plans, specific requirements in Rules 0400-12-01-.06(9)(i), (10)(h), (11)(i), (12)(i), (13)(k), (14)(k), (15)(i), (27)(b) and (27)(d).	Section J	Yes		Proposed updates have been made.
40 CFR 270.14(b)(14) TN Rule 0400-12-01-.07(5)(a)(1)(xiv)	For hazardous waste disposal units that have been closed, documentation that notices required under subparagraph (7)(j) of Rule 0400-12-01-.06 have been filed.	Section O-2	Yes		This notice applies to a closed unit. (Burning Grounds)
40 CFR 270.14(b)(15) TN Rule 0400-12-01-.07(5)(a)(1)(xv)	The most recent closure cost estimate for the facility prepared in accordance with Rule 0400-12-01-.06(8)(c) and a copy of the documentation required to demonstrate financial assurance under Rule 0400-12-01-.06(8)(d). For a new facility, a copy of the required documentation may be submitted 60 days prior to the initial receipt of hazardous wastes, if that is later than the submission of the Part B.	N/A	N/A		This does not apply to federal facilities.
40 CFR 270.14(b)(16) TN Rule 0400-12-01-.07(5)(a)(1)(xvi)	Where applicable, the most recent post-closure cost estimate for the facility prepared in accordance with Rule 0400-12-01-.06(8)(e) plus a copy of the documentation required to demonstrate financial assurance under Rule 0400-12-01-.06(8)(f).	N/A	N/A		This does not apply to federal facilities.

*MLAAP Part B Permit Application
Checklist for Technical Review of RCRA Part B Permit Application for Subpart X Units
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Regulatory Reference	Description	Location of Information in Application	Addressed	Technically Adequate (Yes/No)	Notes
	For a new facility, a copy of the required documentation may be submitted 60 days prior to the initial receipt of hazardous wastes, if that is later than the submission of the Part B.				
40 CFR 270.14(b)(17) TN Rule 0400-12-01-.07(5)(a)(1)(xvii)	Where applicable, a copy of the insurance policy or other documentation which comprises compliance with the requirements of Rule 0400-12-01-06.(8)(n). For a new facility, documentation showing the amount of insurance meeting the specification of Rule 0400-12-01-.06(8)(n)1 and, if applicable, Rule 0400-12-01-.06(8)(n)2, that the owner or operator plans to have in effect before initial receipt of hazardous waste for treatment, storage, or disposal. A request for a variance in the amount of required coverage, for a new or existing facility, may be submitted as specified in Rule 0400-12-01-.06(8)(n)3.	N/A	N/A		This does not apply to federal facilities.
40 CFR 270.14(b)(18) TN Rule 0400-12-01-.07(5)(a)(1)(xviii)	Reserved in TN Rules 270.14(b)(18):Proof of coverage by a State financial mechanism in compliance with 264.149 or 264.150	N/A	N/A		This does not apply to federal facilities.
40 CFR 270.14(b)(19) TN Rule 0400-12-01-.07(5)(a)(1)(xix)	A topographic map showing a distance of 1000 feet around the facility at a scale of 2.5 centimeters (1 inch) equal to not more than 61.0 meters (200 feet). Contours must be shown on the map. The contour interval must be sufficient to clearly show the pattern of surface water flow in the vicinity of and from each operational unit of the facility. For example, contours with an interval of 1.5 meters (5 feet), if relief is greater than 6.1 meters (20 feet), or an interval of 0.6 meters (2 feet), if relief is less than 6.1 meters (20 feet). Owners and operators of Hazardous Waste Management facilities located in mountainous areas should use large contour intervals to adequately show topographic profiles of facilities. NOTE: for large HWM facilities, the Department will allow the use of other scales on a case-by-case basis. The map shall clearly show the following:	Figures B-5, B-7a, and B-7b	Yes		
40 CFR 270.14(b)(19)(i) TN Rule 0400-12-01-.07(5)(a)(1)(xix)(I)	Map scale and date	Figures B-5, B-7a, and B-7b	Yes		
40 CFR 270.14(b)(19)(ii) TN Rule 0400-12-01-.07(5)(a)(1)(xix)(II)	100-year floodplain area	Figures B-7a, B-7b, B-13a & B-13b	Yes		No floodplains within 1-mile
40 CFR 270.14(b)(19)(iii) TN Rule 0400-12-01-.07(5)(a)(1)(xix)(III)	Surface waters including intermittent streams	Figures B-5, B-6, B-7a, B-7b; Section B-2(a)	Yes		B-6 for Sitewide Drainage
40 CFR 270.14(b)(19)(iv) TN Rule 0400-12-01-.07(5)(a)(1)(xix)(IV)	Surrounding land uses (residential, commercial, agricultural, recreational)	Figures B-5, B-7a, and B-7b; Section B-2(b)			
40 CFR 270.14(b)(19)(v) TN Rule 0400-12-01-.07(5)(a)(1)(xix)(V)	A wind rose (ie. Prevailing wind speed and direction)	Figures B-7a, and B-7b; Also see Section K	Yes		

*MLAAP Part B Permit Application
Checklist for Technical Review of RCRA Part B Permit Application for Subpart X Units
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Regulatory Reference	Description	Location of Information in Application	Addressed	Technically Adequate (Yes/No)	Notes
		Air Modeling Report			
40 CFR 270.14(b)(19)(vi) TN Rule 0400-12-01-.07(5)(a)(1)(xix)(VI)	Orientation of the map (north arrow)	All Maps	Yes		
40 CFR 270.14(b)(19)(vii) TN Rule 0400-12-01-.07(5)(a)(1)(xix)(VII)	Legal boundaries of the Hazardous Waste Management facility site	Figure B-1, B-5, B-7a, B-7b	Yes		
40 CFR 270.14(b)(19)(viii) TN Rule 0400-12-01-.07(5)(a)(1)(xix)(VIII)	Access control (fences, gates)	Figures B-7a and B-7b; Section B-2(c)	Yes		
40 CFR 270.14(b)(19)(ix) TN Rule 0400-12-01-.07(5)(a)(1)(xix)(IX)	Injection and withdrawal wells both onsite and offsite	Figures B-2 and B-3; Section B-2(d)	Yes		
40 CFR 270.14(b)(19)(x) TN Rule 0400-12-01-.07(5)(a)(1)(xix)(X)	Buildings; treatment, storage or disposal operations; or other structure (recreation areas, run-off control systems, access and internal roads, storm, sanitary and process sewage systems, loading and unloading areas, fire control facilities, etc.)	Figures B-2 and B-3; Section B-2(e) and B-2(f)	Yes		
40 CFR 270.14(b)(19)(xi) TN Rule 0400-12-01-.07(5)(a)(1)(xix)(XI)	Barriers for drainage or flood control	Figures B-5, B-7a, and B-7b; Section B-2(f)	Yes		
40 CFR 270.14(b)(20)(xii) TN Rule 0400-12-01-.07(5)(a)(1)(xix)(XII)	Location of operational units within the HWM facility site, where hazardous waste is (or will be) treated, stored, or disposed of (include equipment cleanup areas).	Figures B-1, B-4, B-7a, B-7b; Section B	Yes		
40 CFR 270.14(b)(20) TN Rule 0400-12-01-.07(5)(a)(1)(xx)	Reserved in TN Rules 270.14(b)(20): Applicants may be required to submit such information as may be necessary to enable the Regional Administrator to carry out his duties under other Federal laws as required in § 270.3 of this part.	N/A	N/A		
40 CFR 270.14(b)(21) TN Rule 0400-12-01-.07(5)(a)(1)(xxi)	For land disposal facilities, if a case-by-case extension has been approved under Rule 0400-12-01-.10(1)(e) or a petition has been approved under Rule 0400-12-01-.10(1)(f), a copy of the notice of approval for the extension or petition is required.	N/A	N/A		No land disposal occurring at MLAAP
40 CFR 270.14(b)(22) TN Rule 0400-12-01-.07(5)(a)(1)(xxii)	A summary of the pre-application meeting, along with a list of attendees and their addresses, and copies of any written comments or materials submitted at the meeting, as required under part (1)(m)3 of this rule.	Section O	Yes		
TN Rule 0400-12-01-.07(5)(a)(2)	The following additional information is also required:	--	--	--	
TN Rule 0400-12-01-.07(5)(a)(2)(i)	A description of the forms and procedures used or to be used to maintain the operating record required by Rule 0400-12-01-.06(5)(d).	Section F and Appendix F-1			

*MLAAP Part B Permit Application
Checklist for Technical Review of RCRA Part B Permit Application for Subpart X Units
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Regulatory Reference	Description	Location of Information in Application	Addressed	Technically Adequate (Yes/No)	Notes
TN Rule 0400-12-01-.07(5)(a)(2)(ii)	A description of any other wastes or other materials planned to be stored, treated, or disposed of along with hazardous waste in the hazardous waste management units covered by the permit application, and a description of how such other wastes or other materials will be managed in order to comply with the requirements of Rule 0400-12-01-.06(2)(k).	N/A	N/A		
TN Rule 0400-12-01-.07(5)(a)(2)(iii)	The name, address, and telephone number of each person who is the legal or beneficial owner of ten percent or more of the stock of the company or corporation applying for the permit; a statement as to whether any of these persons have been convicted of any felony or have been convicted of a misdemeanor for the unlawful storage, treatment, or disposal of hazardous waste; and a full description of such convictions.	N/A	N/A		This is a federal facility and not subject to this requirement
40 CFR 270.23 TN Rule 0400-12-01-.07(b) 9	Specific Part B Information Requirements for Miscellaneous Units [40 CFR 270.23]				
40 CFR 270.23(a) TN Rule 0400-12-01-.07 (5)(b)(9)(i)	A detailed description of the unit being used or proposed for use, including the following:	Section D	Yes		
40 CFR 270.23(a)(1) TN Rule 0400-12-01-.07 (5)(b)(9)(i)(I)	Physical characteristics, materials of construction, and dimensions of the unit;	Section D	Yes		
40 CFR 270.23(a)(2) TN Rule 0400-12-01-.07 (5)(b) (9)(i)(II)	Detailed plans and engineering reports describing how the unit will be located, designed, constructed, operated, maintained, monitored, inspected, and closed to comply with the requirements of Rule 0400- 12-01-.06(27)(b) and (c); and	Section B; Section D; Section F; Section J	Yes		
40 CFR 270.23(a)(3) TN Rule 0400-12-01-.07 (5)(b) (9)(i)(III)	For disposal units, a detailed description of the plans to comply with the post-closure requirements of Rule 0400-12-01-.06(27)(d).	N/A	N/A		Not a disposal unit.
40 CFR 270.23(b) TN Rule 0400-12-01-.07 (5) (b)(9)(ii)	Detailed hydrologic, geologic, and meteorologic assessments and land-use maps for the region surrounding the site that address and ensure compliance of the unit with each factor in the environmental performance standards of Rule 0400-12-01-.06(27)(b). If the applicant can demonstrate that he does not violate the environmental performance standards of Rule 0400-12-01-.06(27)(b) and the Commissioner agrees with such demonstration, preliminary hydrologic, geologic, and meteorologic assessments will suffice.	Section K	Yes		Air Dispersion Modeling and Risk Assessment
40 CFR 270.23(c) TN Rule 0400-12-01-.07 (5)(b)(9)(iii)	Information on the potential pathways of exposure of humans or environmental receptors to hazardous waste or hazardous constituents and on the potential magnitude and nature of such exposures.	Section K	Yes		Air Dispersion Modeling and Risk Assessment
40 CFR 270.23(d) TN Rule 0400-12-01-.07 (5)(b)(9)(iv)	For any treatment unit, a report on a demonstration of the effectiveness of the treatment based on laboratory or field data.	Section D-4	Yes		Also see CEHNC publication noted in Section D-4
40 CFR 270.23(e) TN Rule 0400-12-01-.07 (5)(b)(9)(v)	Any additional information determined by the Commissioner to be necessary for evaluation of compliance of the unit with the environmental performance standards of Rule 0400-12-01-.06(27)(b).	N/A	N/A		

*MLAAP Part B Permit Application
Checklist for Technical Review of RCRA Part B Permit Application for Subpart X Units
November 2025*

Regulatory Reference	Description	Location of Information in Application	Addressed	Technically Adequate (Yes/No)	Notes
40 CFR 270.14(c) TN Rule 0400-12-01-.07(c)	Additional Information Requirements [40 CFR 270.14(c)] The following additional information regarding protection of groundwater is required from owners or operators of hazardous waste facilities containing a regulated unit except as provided in Rule 0400-12-01-.06(6)(a):				
40 CFR 270.14(c)(1) TN Rule 0400-12-01-.07(5)(c)(1)	Summary of groundwater monitoring data obtained during the interim status period under Rule 0400-12-01-.05(6)(a) through (e), where applicable.	N/A	N/A		MLAAP does not operate under Interim status
40 CFR 270.14(c)(2) TN Rule 0400-12-01-.07(5)(c)(2)	Identification of the uppermost aquifer and aquifers hydraulically interconnected beneath the facility property, including the groundwater flow direction and rate, and the basis for such identification (i.e., the information obtained from hydrogeologic investigations of the facility area).	Figures B-8, B-9, and B-10; Section B-2(g)	Yes		
40 CFR 270.14(c)(3) TN Rule 0400-12-01-.07(5)(c)(3)	On the topographic map required under subpart (a)1(xix) of this paragraph, a delineation of the waste management area, the property boundary, the proposed "point of compliance" as defined under Rule 0400-12-01-.06(6)(f), the proposed location of ground-water monitoring wells as required under Rule 0400-12-01-.06(6)(h), and, to the extent possible, the information required in part 2 of this subparagraph.	Figures B-8, B-9, and B-10; Section B-2(g)	Yes		
40 CFR 270.14(c)(4) TN Rule 0400-12-01-.07(5)(c)(4)	A description of any plume of contamination that has entered the groundwater from a regulated unit at the time that the application was submitted that:	Figures B-11a, B-11b, B-12a, B-12b; Section B-2(g)	Yes		
40 CFR 270.14(c)(4)(i) TN Rule 0400-12-01-.07(5)(c)(4)(i)	Delineates the extent of the plume on the topographic map required under subpart (a)1(xix) of this paragraph; and	Figures B-11a, B-11b, B-12a, B-12b; Section B-2(g)	Yes		
40 CFR 270.14(c)(4)(ii) TN Rule 0400-12-01-.07(5)(c)(4)(ii)	Identifies the concentration of each Appendix IX, of Rule 0400-12-01-.06, constituent throughout the plume or identifies the maximum concentrations of each appendix IX constituent in the plume.	Figures B-11a, B-11b, B-12a, B-12b; Section B-2(g)	Yes		
40 CFR 270.14(c)(5) TN Rule 0400-12-01-.07(5)(c)(5)	Detailed plans and an engineering report describing the proposed ground water monitoring program to be implemented to meet the requirements of Rule 0400- 12-01-.06(6)(h).	Section C; Appendix C-4; Section I	Yes		
40 CFR 270.14(c)(6) TN Rule 0400-12-01-.07(5)(c)(6)	If the presence of hazardous constituents has not been detected in the ground water at the time of permit application, the owner or operator must submit sufficient information, supporting data, and analyses to establish a detection monitoring program which meets the requirements of Rule 0400-12-01-.06(6)(i). This submission must address the following items specified under Rule 0400-12- 01-.06(6)(i):	N/A	N/A		Detection monitoring program already established.
40 CFR 270.14(c)(6)(i) TN Rule 0400-12-01-.07(5)(c)(6)(i)	A proposed list of indicator parameters, waste constituents, or reaction products that can provide a reliable indication of the presence of hazardous constituents in the groundwater;	Section C	Yes		

*MLAAP Part B Permit Application
Checklist for Technical Review of RCRA Part B Permit Application for Subpart X Units
November 2025*

Regulatory Reference	Description	Location of Information in Application	Addressed	Technically Adequate (Yes/No)	Notes
40 CFR 270.14(c)(6)(ii) TN Rule 0400-12-01-.07(5)(c)(6)(ii)	A proposed groundwater monitoring system;	Section C and Appendix C-4	Yes		
40 CFR 270.14(c)(6)(iii) TN Rule 0400-12-01-.07(5)(c)(6)(iii)	Background values for each proposed monitoring parameter or constituent, or procedures to calculate such values; and	Section C	Yes		
40 CFR 270.14(c)(6)(iv) TN Rule 0400-12-01-.07(5)(c)(6)(iv)	A description of proposed sampling, analysis and statistical comparison procedures to be utilized in evaluating groundwater monitoring data.	Section C and Appendix C-4	Yes		
40 CFR 270.14(c)(7) TN Rule 0400-12-01-.07(5)(c)(7)	If the presence of hazardous constituents has been detected in the ground water at the point of compliance at the time of the permit application, the owner or operator must submit sufficient information, supporting data, and analyses to establish a compliance monitoring program which meets the requirements of Rule 0400-12-01-.06(6)(j). Except as provided in Rule 0400-12-01-.06(6)(i)8(v), the owner or operator must also submit an engineering feasibility plan for a corrective action program necessary to meet the requirements of Rule 0400-12-01-.06(6)(k), unless the owner or operator obtains written authorization in advance from the Commissioner to submit a proposed permit schedule for submittal of such a plan. To demonstrate compliance with Rule 0400-12-01-.06(6)(j), the owner or operator must address the following items:	Section C; Appendix C-4; Section I	Yes		
40 CFR 270.14(c)(7)(i) TN Rule 0400-12-01-.07(5)(c)(7)(i)	A description of the wastes previously handled at the facility;	Section C	Yes		
40 CFR 270.14(c)(7)(ii) TN Rule 0400-12-01-.07(5)(c)(7)(ii)	A characterization of the contaminated groundwater, including concentrations of hazardous constituents;	Section C	Yes		
40 CFR 270.14(c)(7)(iii) TN Rule 0400-12-01-.07(5)(c)(7)(iii)	A list of hazardous constituents for which compliance monitoring will be undertaken in accordance with Rules 0400-12-01-.06(6)(h) and (j);	Section C and Appendix C-4	Yes		
40 CFR 270.14(c)(7)(iv) TN Rule 0400-12-01-.07(5)(c)(7)(iv)	Proposed concentration limits for each hazardous constituent, based on the criteria set forth in Rule 0400-12-01-.06(6)(e)1, including a justification for establishing any alternate concentration limits;	Section C and Appendix C-4	Yes		
40 CFR 270.14(c)(7)(v) TN Rule 0400-12-01-.07(5)(c)(7)(v)	Detailed plans and an engineering report describing the proposed ground-water monitoring system, in accordance with the requirements of Rule 0400-12-01-.06(6)(h); and	Section C and Appendix C-4	Yes		
40 CFR 270.14(c)(7)(vi) TN Rule 0400-12-01-.07(5)(c)(7)(vi)	A description of proposed sampling, analysis and statistical comparison procedures to be utilized in evaluating groundwater monitoring data.	Section C and Appendix C-4	Yes		

*MLAAP Part B Permit Application
Checklist for Technical Review of RCRA Part B Permit Application for Subpart X Units
November 2025*

Regulatory Reference	Description	Location of Information in Application	Addressed	Technically Adequate (Yes/No)	Notes
40 CFR 270.14(c)(8) TN Rule 0400-12-01-.07(5)(c)(8)	If hazardous constituents have been measured in the ground water which exceed the concentration limits established under Table 1 of Rule 0400-12-01-.06(6)(e), or if ground water monitoring conducted at the time of permit application under Rules 0400-12-01-.06(6)(a) through (e) at the waste boundary indicates the presence of hazardous constituents from the facility in ground water over background concentrations, the owner or operator must submit sufficient information, supporting data, and analyses to establish a corrective action program which meets the requirements of Rule 0400-12-01-.06(6)(k). However, an owner or operator is not required to submit information to establish a corrective action program if he demonstrates to the Commissioner that alternate concentration limits will protect human health and the environment after considering the criteria listed in Rule 0400-12-01-.06(6)(e)2. An owner or operator who is not required to establish a corrective action program for this reason must instead submit sufficient information to establish a compliance monitoring program which meets the requirements of Rule 0400-12-01-.06(6)(j) and part 6 of this subparagraph. To demonstrate compliance with Rule 0400-12-01-.06(6)(k), the owner or operator must address, at a minimum, the following items:	Section C; Appendix C-4; Section I	Yes		
40 CFR 270.14(c)(8)(i) TN Rule 0400-12-01-.07(5)(c)(8)(i)	A characterization of the contaminated groundwater, including concentrations of hazardous constituents;	Section C; Section I	Yes		
40 CFR 270.14(c)(8)(ii) TN Rule 0400-12-01-.07(5)(c)(8)(ii)	The concentration limit for each hazardous constituent found in the groundwater as set forth in Rule 0400-12-01-.06(6)(e); [40 CFR 264.94]	Section C; Section I	Yes		
40 CFR 270.14(c)(8)(iii) TN Rule 0400-12-01-.07(5)(c)(8)(iii)	Detailed plans and an engineering report describing the corrective action to be taken;	Section I	Yes		
40 CFR 270.14(c)(8)(iv) TN Rule 0400-12-01-.07(5)(c)(8)(iv)	A description of how the groundwater monitoring program will demonstrate the adequacy of the corrective action; and	Section C; Section I	Yes		
40 CFR 270.14(c)(8)(v) TN Rule 0400-12-01-.07(5)(c)(8)(v)	The permit may contain a schedule for submittal of the information required in subparts 8(iii) and (iv) of this subparagraph provided the owner or operator obtains written authorization from the Commissioner prior to submittal of the complete permit application.	--	--	--	
TN Rule 0400-12-01-.07(5)(d)	The following information is required for treatment facilities:	--	--	--	
TN Rule 0400-12-01-.07(5)(d)(1)	A description of the treatment technologies and sequences utilized by types of hazardous wastes handled, to include flow diagrams and mass balances where appropriate; and	Section D	Yes		
TN Rule 0400-12-01-.07(5)(d)(2)	A description of procedures, structures, or equipment used at the facility to monitor treatment processes	Section D	Yes		

MLAAP PART A PERMIT APPLICATION

SECTION A - RCRA PART A PERMIT INFORMATION

A-1 RCRA SUBTITLE C ACTIVITIES FORMS

United States Environmental Protection Agency
RCRA SUBTITLE C SITE IDENTIFICATION FORM



1. Reason for Submittal (Select only one.)

☐	Obtaining or updating an EPA ID number for on-going regulated activities (Items 10-17 below) that will continue for a period of time.
☐	Submitting as a component of the Hazardous Waste Report for _____ (Reporting Year)
☐	Site was a TSD facility, a reverse distributor, and/or generator of $\geq 1,000$ kg of non-acute hazardous waste, > 1 kg of acute hazardous waste, or > 100 kg of acute hazardous waste spill cleanup in one or more months of the reporting year (or State equivalent LQG regulations)
☐	Notifying that regulated activity is no longer occurring at this Site
☐	Obtaining or updating an EPA ID number for conducting Electronic Manifest Broker activities
☒	Submitting a new or revised Part A (permit) Form

2. Site EPA ID Number

T	N	0	2	1	0	0	2	0	5	8	2
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3. Site Name

Milan Army Ammunition Plant (National Guard Bureau)
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4. Site Location Address

Street Address 2280 Highway 104 West, Suite 1		
City, Town, or Village Milan	County Carroll/Gibson	
State Tennessee	Country U.S.	Zip Code 38358
Latitude 35°52'19"N	Longitude 88°41'3"W	☐ Use Lat/Long as Primary Address

5. Site Mailing Address

☐ Same as Location Street Address

Street Address P.O. Box 509		
City, Town, or Village Milan		
State Tennessee	Country U.S.	Zip Code 38358

6. Site Land Type

☐ Private	☐ County	☐ District	☒ Federal	☐ Tribal	☐ Municipal	☐ State	☐ Other
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7. North American Industry Classification System (NAICS) Code(s) for the Site (at least 5-digit codes)

A. (Primary) 928110	C.
B. 332993	D.

8. Site Contact Person

Enter the primary site contact here and additional contacts in Appendix A.

First Name Thomas	MI S	Last Name Nowell
Title Commander's Representative, MLAAP		
Email thomas.s.nowell.civ@army.mil		
Phone 731-686-6884	Ext	Fax
Preferred Language		

A. Site Contact Address

Same as Location Address

Street Address 2280 Highway 104 West, Suite 1		
City, Town, or Village Milan		
State Tennessee	Country U.S.	Zip Code 38358

9. Legal Owner and Operator of the Site**A. Name of Site's Legal Owner**

Same as Location Address

Full Name National Guard Bureau, ARNG, G-9 Cleanup and Restoration	Date Became Owner (mm/dd/yyyy) 8/22/2022
Owner Type ☐ Private ☐ County ☐ District ☒ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other	
Street Address 111 S. George Mason Drive	
City, Town, or Village Arlington	
State Virginia	Country U.S. Zip Code 22204
Email walter.f.gee.civ@army.mil / thomas.s.nowell.civ@army.mil	
Phone (703) 607-7980	Ext Fax
Comments	

B. Name of Site's Legal Operator

Same as Location Address

Full Name U.S. Army MLAAP	Date Became Operator (mm/dd/yyyy) 8/22/2022
Operator Type ☐ Private ☐ County ☐ District ☒ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other	
Street Address 2280 Highway 104 West, Suite 1	
City, Town, or Village Milan	
State Tennessee	Country U.S. Zip Code 38358
Email thomas.s.nowell.civ@army.mil	
Phone 731-686-6884	Ext Fax
Comments Commander's Representative	

10. Type of Regulated Waste Activity (at your site)

Mark "Yes" or "No" for all current activities (as of the date submitting the form); complete any additional boxes as instructed.

A. Hazardous Waste Activities

☒ Y ☐ N	1. Generator of Hazardous Waste—If "Yes", mark only one of the following—a, b, c	
☐	a. LQG	-Generates, in any calendar month, 1,000 kg/mo (2,200 lb/mo) or more of non-acute hazardous waste (includes quantities imported by importer site); or - Generates, in any calendar month, or accumulates at any time, more than 1 kg/mo (2.2 lb/mo) of acute hazardous waste; or - Generates, in any calendar month or accumulates at any time, more than 100 kg/mo (220 lb/mo) of acute hazardous spill cleanup material.
☐	b. SQG	100 to 1,000 kg/mo (220-2,200 lb/mo) of non-acute hazardous waste and no more than 1 kg (2.2 lb) of acute hazardous waste and no more than 100 kg (220 lb) of any acute hazardous spill cleanup material.
☒	c. VSQG	Less than or equal to 100 kg/mo (220 lb/mo) of non-acute hazardous waste.
☒ Y ☐ N	Is State Generator of Hazardous Waste the same as Federal— If "No", indicate State Generator Category in the space provided.	
☐ Y ☒ N	2. Short-Term Generator (generates from a short-term or one-time event and not from on-going processes). If "Yes", provide an explanation in the Comments section. <i>Note: If "Yes", you MUST indicate that you are a Generator of Hazardous Waste in Item 10.A.1 above.</i>	
☒ Y ☐ N	3. Treater, Storer or Disposer of Hazardous Waste—Note: Part B of a hazardous waste permit is required for these activities.	
☐ Y ☒ N	4. Receives Hazardous Waste from Off-site	
☐ Y ☒ N	5 Recycler of Hazardous Waste	
☐	a. Recycler who stores prior to recycling	
☐	b. Recycler who does not store prior to recycling	
☐ Y ☒ N	6. Exempt Boiler and/or Industrial Furnace—If "Yes", mark all that apply.	
☐	a. Small Quantity On-site Burner Exemption	
☐	b. Smelting, Melting, and Refining Furnace Exemption	

B. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g. D001, D003, F007, U112). Use an additional page if more spaces are needed.

D001	D002	D003	D004	D005	D006	D007
D008	D009	F003	F005	LABP		

C. Waste Codes for State Regulated (non-Federal) Hazardous Wastes. Please list the waste codes of the State hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed.

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11. Additional Regulated Waste Activities (NOTE: Refer to your State regulations to determine if a separate permit is required.)**A. Other Waste Activities**

☐ Y ☒ N	1. Transporter of Hazardous Waste—If “Yes”, mark all that apply.
☐	a. Transporter
☐	b. Transfer Facility (at your site)
☐ Y ☒ N	2. Underground Injection Control
☐ Y ☒ N	3. United States Importer of Hazardous Waste
☐ Y ☒ N	4. Recognized Trader—If “Yes”, mark all that apply.
☐	a. Importer
☐	b. Exporter
☐ Y ☒ N	5. Importer/Exporter of Spent Lead-Acid Batteries (SLABs) under 40 CFR 266 Subpart G—If “Yes”, mark all that apply.
☐	a. Importer
☐	b. Exporter

B. Universal Waste Activities

☐ Y ☒ N	1. Large Quantity Handler of Universal Waste (you accumulate 5,000 kg or more) - If “Yes” mark all that apply. Note: Refer to your State regulations to determine what is regulated.
☐	a. Batteries
☐	b. Pesticides
☐	c. Mercury containing equipment
☐	d. Lamps
☐	e. Aerosol Cans
☐	f. Other (specify) _____
☐	g. Other (specify) _____
☐ Y ☒ N	2. Destination Facility for Universal Waste Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities

☐ Y ☒ N	1. Used Oil Transporter—If “Yes”, mark all that apply.
☐	a. Transporter
☐	b. Transfer Facility (at your site)
☐ Y ☒ N	2. Used Oil Processor and/or Re-refiner—If “Yes”, mark all that apply.
☐	a. Processor
☐	b. Re-refiner
☐ Y ☒ N	3. Off-Specification Used Oil Burner
☐ Y ☒ N	4. Used Oil Fuel Marketer—If “Yes”, mark all that apply.
☐	a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
☐	b. Marketer Who First Claims the Used Oil Meets the Specifications

D. Pharmaceutical Activities

☐ Y ☒ N	1. Operating under 40 CFR Part 266, Subpart P for the management of hazardous waste pharmaceuticals—if “Yes”, mark only one. Note: See the item-by-item instructions for definitions of healthcare facility and reverse distributor.
☐	a. Healthcare Facility
☐	b. Reverse Distributor
☐ Y ☒ N	2. Withdrawing from operating under 40 CFR Part 266, Subpart P for the management of hazardous waste pharmaceuticals. Note: You may only withdraw if you are a healthcare facility that is a VSQG for all of your hazardous waste, including hazardous waste pharmaceuticals.

12. Eligible Academic Entities with Laboratories—Notification for opting into or withdrawing from managing laboratory hazardous wastes pursuant to 40 CFR Part 262, Subpart K.

☐ Y ☒ N	A. Opting into or currently operating under 40 CFR Part 262, Subpart K for the management of hazardous wastes in laboratories— If “Yes”, mark all that apply. Note: See the item-by-item instructions for definitions of types of eligible academic entities.
☐	1. College or University
☐	2. Teaching Hospital that is owned by or has a formal written affiliation with a college or university
☐	3. Non-profit Institute that is owned by or has a formal written affiliation with a college or university
☐ Y ☒ N	B. Withdrawing from 40 CFR Part 262, Subpart K for the management of hazardous wastes in laboratories.

13. Episodic Generation

☐ Y ☒ N	Are you an SQG or VSQG generating hazardous waste from a planned or unplanned episodic event, lasting no more than 60 days, that moves you to a higher generator category. If “Yes”, you must fill out the Addendum for Episodic Generator.
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14. LQG Consolidation of VSQG Hazardous Waste

☐ Y ☒ N	Are you an LQG notifying of consolidating VSQG Hazardous Waste Under the Control of the Same Person pursuant to 40 CFR 262.17(f)? If “Yes”, you must fill out the Addendum for LQG Consolidation of VSQG hazardous waste.
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15. Notification of LQG Site Closure for a Central Accumulation Area (CAA) (optional) OR Entire Facility (required)

☐ Y ☒ N	LQG Site Closure of a Central Accumulation Area (CAA) or Entire Facility.
A. ☐ Central Accumulation Area (CAA) or ☐ Entire Facility	
B. Expected closure date: _____ mm/dd/yyyy	
C. Requesting new closure date: _____ mm/dd/yyyy	
D. Date closed : _____ mm/dd/yyyy	
☐	1. In compliance with the closure performance standards 40 CFR 262.17(a)(8)
☐	2. Not in compliance with the closure performance standards 40 CFR 262.17(a)(8)

16. Notification of Hazardous Secondary Material (HSM) Activity

☐ Y ☒ N	Are you notifying under 40 CFR 260.42 that you will begin managing, are managing, or will stop managing hazardous secondary material under 40 CFR 260.30, 40 CFR 261.4(a)(23), (24), (25), or (27)? If "Yes", you must fill out the Addendum to the Site Identification Form for Managing Hazardous Secondary Material.
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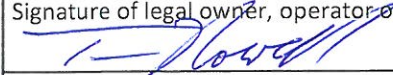
17. Electronic Manifest Broker

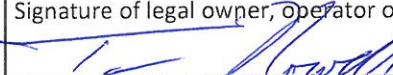
☐ Y ☒ N	Are you notifying as a person, as defined in 40 CFR 260.10, electing to use the EPA electronic manifest system to obtain, complete, and transmit an electronic manifest under a contractual relationship with a hazardous waste generator?
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18. Comments (include item number for each comment)

The purpose of this permit application is to conduct closure activities at the Open Detonation Unit at MLAAP. Once closure activities are complete, MLAAP intends to pursue the closure of this permit.

19. Certification I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations. **Note: For the RCRA Hazardous Waste Part A permit Application, all owners and operators must sign (see 40 CFR 270.10(b) and 270.11).**

Signature of legal owner, operator or authorized representative	Date (mm/dd/yyyy)
	11/4/2025
Printed Name (First, Middle Initial Last)	Title
Thomas S Nowell / Walter F. Gee	Commander's Representative / Cleanup Program Manager
Email	
thomas.s.nowell.civ@army.mil / walter.f.gee.civ@army.mil	

Signature of legal owner, operator or authorized representative	Date (mm/dd/yyyy)
	11/4/2025
Printed Name (First, Middle Initial Last)	Title
Thomas S Nowell	Commander's Representative
Email	
thomas.s.nowell.civ@army.mil	

Appendix A: Additional Contacts

1. Contact Name

Contact Type Operator/ Owner Signatory	Preferred Language	
First Name Thomas	MI S	Last Name Nowell
Title Commander's Representative		
Email Thomas.s.nowell.civ@army.mil		
Phone 731-686-6884	Ext	Fax

A. Contact Address

☒ Same as Location Address

Street Address		
City, Town, or Village		
State	Country	Zip Code

2. Contact Name

Contact Type Administrative	Preferred Language	
First Name Shelby	MI T	Last Name Staten
Title Environmental & Natural Resources Manager		
Email shelby.t.staten.civ@army.mil		
Phone 731-686-6160	Ext	Fax

A. Contact Address

☒ Same as Location Address

Street Address		
City, Town, or Village		
State	Country	Zip Code

3. Contact Name

Contact Type Administrative	Preferred Language	
First Name Caleb	MI B	Last Name Johnson
Title EHS Manager		
Email Caleb.Johnson@aolllc.biz		
Phone 731-686-6675	Ext	Fax

A. Contact Address

☒ Same as Location Address

Street Address		
City, Town, or Village		
State	Country	Zip Code

ADDENDUM TO THE SITE IDENTIFICATION FORM: NOTIFICATION OF HAZARDOUS SECONDARY MATERIAL ACTIVITY

**ONLY fill out this form if:**

- You are located in a State that allows you to manage excluded hazardous secondary material (HSM) under 40 CFR 260.30, 261.4(a)(23), (24), (25), or (27) (or state equivalent; See <https://www.epa.gov/hw/where-2018-definition-solid-waste-rule-effect> for a list of eligible states; AND
- You are or will be managing excluded HSM in compliance with 40 CFR 260.30, 261.4(a)(23), (24), (25), or (27) (or state equivalent) or have stopped managing excluded HSM in compliance with the exclusion(s) and do not expect to manage any amount of excluded HSM under the exclusion(s) for at least one year. Do not include any information regarding your hazardous waste activities in this section. Note: If your facility was granted a solid waste variance under 40 CFR 260.30 prior to July 13, 2015, your management of HSM under 40 CFR 260.30 is grandfathered under the previous regulations and you are not required to notify for the HSM management activity excluded under 40 CFR 260.30.

1. Reason for Notification (Include dates where requested)

- ☐ Facility will begin managing excluded HSM as of _____ (mm/dd/yyyy).
- ☐ Facility is still managing excluded HSM/re-notifying as required by March 1 of each even-numbered year.
- ☐ Facility has stopped managing excluded HSM as of _____ (mm/dd/yyyy) and is notifying as required.

2. Description of Excluded HSM Activity. Please list the appropriate codes (see Code List section of the instructions) and quantities, in short tons, to describe your excluded HSM activity ONLY (do not include any information regarding your hazardous wastes). Use additional pages if more space is needed.

A. Facility Code	B. Waste Code(s) for HSM	C. Estimate Short Tons of excluded HSM to be managed annually	D. Actual Short Tons of excluded HSM that was managed during the most recent odd-numbered year	E. Land-based Unit Code

ADDENDUM TO THE SITE IDENTIFICATION FORM: EPISODIC GENERATOR

**ONLY fill out this form if:**

- You are an SQG or VSQG generating hazardous waste from a planned or unplanned episodic event, lasting no more than 60 days, that moves the generator to a higher generator category pursuant to 40 CFR 262 Subpart L. Note: Only one planned and one unplanned episodic event are allowed within one year; otherwise, you must follow the requirements of the higher generator category. Use additional pages if more space is needed.

Episodic Event		
1. Planned ☐ Excess chemical inventory removal ☐ Tank cleanouts ☐ Short-term construction or demolition ☐ Equipment maintenance during plant shutdowns ☐ Other _____	2. Unplanned ☐ Accidental spills ☐ Production process upsets ☐ Product recalls ☐ "Acts of nature" (Tornado, hurricane, flood, etc.) ☐ Other _____	
3. Emergency Contact Phone _____	4. Emergency Contact Name _____	
5. Beginning Date _____ (mm/dd/yyyy)	6. End Date _____ (mm/dd/yyyy)	

Waste 1

7. Waste Description	8. Estimated Quantity (in pounds)
9. Federal and/or State Hazardous Waste Codes	

Waste 2

7. Waste Description	8. Estimated Quantity (in pounds)
9. Federal and/or State Hazardous Waste Codes	

Waste 3

7. Waste Description	8. Estimated Quantity (in pounds)
9. Federal and/or State Hazardous Waste Codes	

ADDENDUM TO THE SITE IDENTIFICATION FORM: LQG CONSOLIDATION OF VSQG HAZARDOUS WASTE

**ONLY fill out this form if:**

- You are an LQG receiving hazardous waste from VSQGs under the control of the same person. Use additional pages if more space is needed.

VSQG 1		
1. EPA ID Number (if assigned)		2. Name
3. Street Address		
4. City, Town, or Village	5. State	6. Zip Code
7. Contact Phone Number	8. Contact Name	
9. Email		

VSQG 2		
1. EPA ID Number (if assigned)		2. Name
3. Street Address		
4. City, Town, or Village	5. State	6. Zip Code
7. Contact Phone Number	8. Contact Name	
9. Email		

VSQG 3		
1. EPA ID Number (if assigned)		2. Name
3. Street Address		
4. City, Town, or Village	5. State	6. Zip Code
7. Contact Phone Number	8. Contact Name	
9. Email		

United States Environmental Protection Agency

HAZARDOUS WASTE PERMIT PART A FORM



1. Facility Permit Contact

First Name	Thomas	MI	S	Last Name	Nowell
Title	Commander's Representative				
Email	Thomas.s.nowell.civ@army.mil				
Phone	731-686-6884	Ext		Fax	

2. Facility Permit Contact Mailing Address

Street Address	P.O. Box 509					
City, Town, or Village	Milan					
State	TN	Country	USA (county: Carroll/Gibson)		Zip Code	35358

3. Facility Existence Date (mm/dd/yyyy)

1/1/1942

4. Other Environmental Permits

A. Permit Type	B. Permit Number												C. Description
N	T	N	0	0	0	0	0	6	0				Facility Wastewater & Stormwater Permit
R	T	N	H	W	-	1	5	2					Hazardous Waste Storage Permit (closing)
E	I	D	L	2	7	1	0	1	0	0	8	5	Industrial Landfill Permit Class II
E	0	-	2	7	0	1	0	4					Underground Storage Tanks (Temp Closed)

5. Nature of Business

Divestment, closure, and remediation of environmental liabilities and properties of the U.S. Army.

6. Process Codes and Design Capacities

Line Number	A. Process Code			B. Process Design Capacity		C. Process Total Number of Units	D. Unit Name
				(1) Amount	(2) Unit of Measure		
1	X	0	1	5.0	N	020	Open Detonation Unit

7. Description of Hazardous Wastes (Enter codes for Items 7.A, 7.C and 7.D(1))

Line No.	A. EPA Hazardous Waste No.				B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes									
							(1) Process Codes								(2) Process Description (if code is not entered in 7.D1))	
1	D	0	0	3	2,400	P	S	0	1	X	0	1				TDEC WS No. 3
2	D	0	0	4	0	P	S	0	1							TDEC WS No. 7
3	D	0	0	5												included with above
4	D	0	0	6												included with above
5	D	0	0	7												included with above
6	D	0	0	8												included with above
7	D	0	0	1	480	P	S	0	1							TDEC WS No. 11
8	F	0	0	3												included with above
9	F	0	0	5												included with above
1	0	D	0	0	8	P	S	0	1							TDEC WS No. 12
1	1	D	0	0	9	P	S	0	1							TDEC WS No. 38

8. Map

Attach to this application a topographical map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all spring, rivers, and other surface water bodies in this map area. See instructions for precise requirements.

9. Facility Drawing

All existing facilities must include a scale drawing of the facility. See instructions for more detail.

10. Photographs

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment, and disposal areas; and sites of future storage, treatment, or disposal areas. See instructions for more detail.

11. Comments

Additional page used for description of hazardous wastes.

7. Description of Hazardous Wastes- Continued

Line No.	A. EPA Hazardous Waste No.	B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes	
				(1) Process Codes	(2) Process Description (if code is not entered in 7.D1)
12	LABP	800	P	S01	TDEC WS No. 40
13	D001	75	P	S01	TDEC WS No. 58
14	F003				Included with above
15	F005				Included with above
16	D001	0	P	S01	TDEC WS No. 74
17	D002	100	P	S01	TDEC WS No. 77
18	D006	1000	P	S01	TDEC WS No. 81
19	D008				Included with above
20	D004	1000	P	S01	TDEC WS No. 88
21	D001	0	P	S01	TDEC WS No. 89

A-2 Site Photographs



Area W ADA – Building W-53 Shooting Barricade



Area W ADA – View from W-53 Shooting Barricade
Towards West Shooting Field



Area W ADA – View from W-53 Shooting Barricade
Towards East Shooting Field



Area W ADA – View of East Shooting Field



Area W ADA – View of West Shooting Field

A-3 Additional Waste Stream Information

TDEC Wastestream Number	Waste Name	EPA Waste Codes	Waste To Be Treated at MLAAP?	Waste Streams To Be Closed In Near Future
No. 3	Non-listed Reactive (Explosives, Reactive Munitions Waste/Debris)	D003	X	-
No. 7	Ash	D004, D005, D006, D007, D008	-	X
No. 11	Paint Sludge and Thinner	D001, F003, F005	-	-
No. 12	Spent Oils	D008	-	X
No. 38	Waste Fluorescent Bulbs D008	D009	-	X
No. 40	Waste Lab Pack (Laboratory Chemicals)	LABP	-	-
No. 58	Waste Adhesive/Cement	D001, F003, F005	-	-
No. 74	Varsol	D001	-	X
No. 77	Waste Sodium Hydroxide	D002	-	-
No. 81	Paint Chips and Debris	D006, D008	-	-
No. 88	Arsenic Contaminated Wood	D004	-	-
No. 89	Waste Aerosols Flammable	D001	-	-

SECTION B

FACILITY DESCRIPTION

B-1 GENERAL DESCRIPTION

This application was prepared in accordance with Title 40 Code of Federal Regulations (CFR) 264 Subpart X (Miscellaneous Units), appropriate sections of 40 CFR 270, and Tennessee Hazardous Waste Management Regulations (THWMR) 0400-12-01-.07.

A separate Milan Army Ammunition Plant (MLAAP) Part B Permit (#TNHW-152), dated September 26, 2012, that addressed the general and specific requirements associated with the storage of hazardous waste in containers at MLAAP has undergone closure activities and is no longer active. This submittal has been prepared to reflect MLAAP's intent to permit a miscellaneous thermal treatment unit (MTT) in order to complete closure activities at MLAAP's Open Detonation unit, also referred to as the Ammunition Destruction Area (ADA). Originally in permit TNHW-153, there were two MTTUs: an Open Burn (OB) Unit and an Open Detonation (OD) Unit. Both are located within Area W, an area referred to herein as the Waste Management Area (WMA). The OB has been closed and removed from TNHW-153 in accordance with Federal RCRA and Tennessee Requirements and will not be included in this application. The only remaining MTTU to be closed is the OD unit.

B-1(a) Site Location

The WMA is in the east-central portion of the former MLAAP boundary, entirely within Carroll County. The MLAAP was a 22,540-acre site located in Gibson and Carroll Counties in western Tennessee. The Army has begun the divestiture process for the land, and the majority of the southern portion of the MLAAP is now owned by the National Guard Bureau- which is leased to the TN Army National Guard for use. The longitude of MLAAP is divided by the counties along Highway 104. Most of MLAAP's boundary neighbors are private citizens in a rural setting. The City of Milan and the University of Tennessee Agricultural Experiment Station share the northwest boundary, and the Tennessee Army National Guard shares much of the remaining boundaries. Figure B-1 is a vicinity map depicting the general location of the MLAAP. Figure B-2 is a facility drawing of MLAAP. Note- Figure B-2 is included for general reference and sections of the facility have changed since its creation. All figures for Section B are in Appendix B-1.

The MLAAP street address:
Milan Army Ammunition Plant
2280 Highway 104 West, Suite 1
Milan, Tennessee 38358-3176

The MLAAP mailing address:
Milan Army Ammunition Plant
P.O. Box 509
Milan, Tennessee 38358

B-1(b) Owner/Operator

The MLAAP is a government-owned, contractor-operated (GOCO) military industrial installation currently operated by American Ordnance LLC (AO), with a mission that formerly included loading, assembling, packaging, storing, and shipping small and medium caliber ammunition, as well as reconditioning and demolition of munitions. In 2012, production ceased and the facility has been undergoing closure. In 2019, the secretary of the Army declared MLAAP mission complete and excess to the needs of the Army. Since that time, MLAAP has been proceeding with the divestment of the installation.

While the installation as a whole is a GOCO site, the permit will reflect the National Guard Bureau as the owner and the Army as the operator of the permit. The Army will then utilize subcontractors such as Weston Solutions to perform cleanup and closure activities.

The contact persons responsible for hazardous waste management activities at MLAAP are:

Army Environmental Manager
Milan Army Ammunition Plant
P.O. Box 509
Milan, Tennessee 38358
Office Telephone: (731) 686-6160

And

Contractor EHS Manager
Milan Army Ammunition Plant
P.O. Box 509
Milan, Tennessee 38358
Office Telephone: (731) 686-6675

B-1(c) Current Operations

MLAAP is assigned the following general responsibilities:

- Operation and maintenance of active facilities in support of current operations
- General maintenance and caretaker status of facilities
- Continuation of environmental cleanup and liabilities
- Continue closure activities as the facility undergoes divestiture
- Support service for tenants

Hazardous wastes generated at MLAAP may include waste propellants, explosives, pyrotechnics (PEP), munitions, explosive components and explosive contaminated materials. Explosive waste may be generated as a result of building demolition activities as former production lines are decontaminated and remnant explosives may be found. MLAAP also generates waste fluorescent bulbs, spent batteries, non-explosive contaminated waste inks, non-explosive contaminated waste solvents, non-explosive contaminated waste paint-related material, lab packs, and other miscellaneous wastes.

Waste PEP and munitions components, all of which are defined in 40 CFR Part 260.10 as military munitions, and treated at MLAAP via miscellaneous thermal treatment, are the subject of this Part B Permit Application.

Hazardous waste formerly was treated at the WMA at two units: an OB Unit and an OD Unit. The OB Unit is closed. If the following permit application is approved, the OD Unit will be utilized to fulfill closure requirements.

Treatment at the OD Unit occurred both aboveground and in subsurface configurations. Subsurface thermal treatment was for bulk military high explosives, completed large-caliber military ammunition, and munitions components. Aboveground thermal treatment associated with the OD Unit was for treatment of machine-damaged, dropped, and other dangerous rounds. Aboveground open detonation was only used on munitions items that are too dangerous to manage via standard subsurface treatment. The OD Unit is approximately 40 acres with two adjacent shooting fields (referred to as the East Shooting Field and West Shooting Field) containing earthen pits.

No new design drawings are included in this application.

B-1(d) Site History

MLAAP was constructed between January 1941 and January 1942 and has been in operation for nearly 85 years. MLAAP's general mission has been the manufacture, storage, and shipment of explosive ordnance, including both small and medium caliber military ammunition.

Numerous studies and major investigations have been and are currently being conducted to determine environmental contamination due to historical operational and disposal practices. These past waste management practices are being addressed under an agreement among the U.S. Environmental Protection Agency (USEPA) Region 4, Tennessee Department of Environment and Conservation (TDEC), and U.S. Department of the Army titled *Federal Facilities Agreement* (FFA) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 120 and RCRA Sections 3008(H), 3004(U), and 3004(V) for MLAAP. This Agreement addresses all known environmental impacted locations at the MLAAP and names CERCLA as the lead agency in these cases. CERCLA investigations have resulted in three areas being identified as Solid Waste Management Units (SWMUs) that are slated for further investigation and remediation: the former OD Unit, the recently closed OB Unit, and the current OD Unit. Any future investigation and remediation activities will be conducted under CERCLA as outlined in the FFA and defined in MLAAP's Interagency Agreement with the USEPA and TDEC. MLAAP has numerous active CERCLA investigation monitoring wells in and around the WMA.

Appendix B-2 summarizes information regarding past waste management practices at MLAAP.

B-1(e) Wind Rose

Two maps with wind roses have been provided in Figures B-7a and B-7b. Additionally, a wind rose can be found accompanying the air modeling report alongside Section K.

B-2 TOPOGRAPHIC MAP

Topographic maps and supplemental maps are provided as Figures B-1, B-2, B-3, B-4, B-5, B-6, B-7a, B-7b, B-13a, B-13b to meet the requirements of 40 CFR 270.14(b)(19) and 270.14(c),(2),(3), and (4). The U.S. Geological Survey (USGS) topographic map dated 1983 and used for this permit application to illustrate the WMA at MLAAP use a scale of 1 inch to 200 feet as required in 40 CFR 270.14(b)(19). That topographic map, Figure B-5, displays two-foot contours, which provides sufficient detail to assess surface water run-off patterns in the vicinity of the OD unit. Other maps illustrating the WMA in its entirety are at a scale, indicated in the legends, sufficient to allow the reviewer to identify and measure required information pertinent to this permit application.

The topographic maps show the boundaries for the former MLAAP property, as well as the following features. To clarify, the US Army still owns the former MLAAP property, but much of that property has been bought by the Army's National Guard Bureau.

B-2(a) Surface Waters

Numerous perennial and ephemeral surface water features are within the MLAAP. The most substantial perennial stream is Wolf Creek, which receives flow from three forks (Dry Creek, East Fork Wolf River, and West Fork Wolf Creek) that drain the south and central portions of the MLAAP. Wolf Creek discharges into the

Rutherford Fork of the Obion River near the northwest boundary of the installation. The extreme south portion of the MLAAP drains south to the Middle Fork of the Forked Deer River. The northeast portion drains to Hall's Branch, then John's Creek, then the Rutherford Fork of the Obion River. The north portions of MLAAP not drained by Hall's Branch contain several well-developed, unnamed ephemeral drainageways that join the Rutherford Fork along the north boundary of the site. The two parent streams, the Forked Deer River and the Obion River, empty into the Mississippi River approximately 60 miles west of MLAAP.

B-2(b) Surrounding Land Use

Land use within 1,000 feet of the WMA consist of woods, a closed solid waste landfill (northwest of the OB Unit), and magazines once used for storing explosives and finished munitions. The land around the closed magazines is used for domestic livestock grazing. North of the WMA, within the MLAAP boundary, are the former production areas. North of those areas are woods and open farmland. West and south, of the WMA are wooded lots and open farmland with mixed country dwellings. East of the WMA is the Tennessee Army National Guard Training facilities, which consist of wooded lots and open fields. Figure B-5 depicts land use up to 1,000 feet surrounding Army property, and Figures B-7a and Figure B-7b are topographic maps of the OD unit, that outline a surrounding 1,000-foot buffer.

B-2(c) Access Controls

The entire MLAAP installation is operated under strict security and access controls. Entry to the installation is limited to badged employees and authorized visitors only. A five-strand barbed wire fence or 8-foot chain link fence surrounds the entire installation boundary to provide added security. Many areas and all operation lines are surrounded by a chain link fence with barbed wire outriggers. Single entry and exit points are policed by MLAAP security when active and are also locked during periods of inactivity. The WMA is within the MLAAP's outer fenced boundary, which provides a dual measure of security.

The following warnings are at area gates: signs reading "U.S. Government Property, WARNING, Authorized Personnel Only, No Smoking, No Matches, No Flame Producers Without Permit, Beyond This Point," "Caution, Safety Glasses with Side Shields, Required Beyond this Point," and "DANGER — Unauthorized Personnel Keep Out."

The OD Unit is surrounded by a 6-foot tall chain link fence with barbed wire outriggers. The OD Unit vehicle crash entrance gate on the south side is locked at all times except when manned. The OD Unit gate is only opened and closed by operations personnel assigned to the area or security personnel. A MLAAP security police mobile unit also patrols the OD Unit.

Access control features at the OD unit within the WMA are depicted in Figures B-7a and B-7b.

B-2(d) Injection and Withdrawal Wells

The six formerly active injection wells at the MLAAP, labeled as "(6) Reinjection Well (OU-1)" on Figure B-3, are not within the WMA boundary. The injection wells were associated with the formerly active O-Line Ground Water Treatment System Operable Unit (OU) #1, a pump-and-treat system designed and constructed to remediate contaminated groundwater at the closed O-Line treatment ponds. The injection wells are approximately 1 mile north/northwest of the OB Unit in a generally downgradient position.

In accordance with a December 23, 2009 e-mail correspondence from USEPA approving the shutdown of OU1 ground water treatment system was formally shutdown and extracted groundwater was pumped to OU4 for treatment.

Three groundwater extraction wells (160 A, B, and C), located near OU1, are now inactive. Additional extraction wells have since been installed to improve contaminant mass removal.

Groundwater monitoring and supply wells at the MLAAP, including those installed within 1,000 feet of the WMA, are shown on Figures B-2, B-3, B-8, and B-10.

The nearest operational downgradient withdrawal well (MLAAP Well S-99) utilized for drinking water is over 3.5 miles north/northwest of the OB Unit. The nearest operational upgradient withdrawal well (MLAAP Well C-5) is approximately 0.75 miles south of the OD Unit. Both Wells S-99 and C-5 are water supply wells.

The nearest upgradient offsite withdrawal well (Cedar Grove) is approximately 2 miles south/southeast of the WMA. The nearest downgradient offsite withdrawal wells (residence and New Hope Church) are approximately 4.5 miles north/northwest of the WMA.

B-2(e) Buildings and Other Structures

Land use within Army property are as follows (agricultural, storage, and field services facilities are mixed-use areas with livestock grazing within storage and field services areas):

Leased for agricultural purposes	7,828 acres
Production facilities (former/inactive)	548 acres
Storage facilities	7,930 acres
Field services areas	9,897 acres
Administrative, shop, other	1,395 acres

Figure B-7a and B-7b identifies the OD Unit and all the buildings and structures within 1,000 feet including Building W-53 (earthen covered concrete barricade) which stores sensitive material, and the former Explosive Waste Transfer Facility (EWTF). The former EWTF is enclosed with a locked, 6-foot chain link fence with barbed wire outriggers.

B-2(f) Drainage and Flood Control Barriers

Run-Off Control System

Surface drainage in the WMA is provided by local swales, sediment basins, and ditches (see Figures B-5, B-6, B-7a and B-7b). Select areas of the WMA have been contoured to allow for construction and to facilitate storm water run-off.

OD Unit

When in operation, soil ejected by blasts during detonation was spread thinly over a large area. Most of the soil was recovered and used to reform the next pit. Surface drainage from the West Shooting Fields at the OD Unit is controlled via two engineer-designed silt settlement basins and generally flows west along an unnamed wet weather conveyance to Wolf Creek. Three 12-inch corrugated polyvinyl chloride (PVC) pipes are at the lowest elevation of each silt basin. The PVC pipes stand upright and contain holes that allow the water to flow through the pipe, while sediment is allowed to settle. The pipe then carries the water to a creek or ditch that flows north to the Rutherford Fork of the Obion River. Run-off from the East Shooting Fields is controlled by an engineer-designed silt settlement basin and flows east to Halls Branch.

Storm, Sanitary, and Process Sewers

Due to the remote location of the WMA, the immediately surrounding area contains no storm or process sewers. Storm water run-off at the WMA is along natural or contoured drainage ditches and creeks. Culverts under roads in drainage paths and engineer-designed sediment basins (OD Unit) are the only overflow structures.

Loading and Unloading Areas

Within the OD Unit, loading and unloading of wastes used to occur primarily in the secured EWTF, where explosives were stored in sealed and locked transportation units. Now that the EWTF is closed, and waste is no longer received for treatment, official loading and unloading areas will not be necessary. There will be no loading/unloading of hazardous waste, however, scrap metal that is free of explosive hazards will be loaded into containers in the ADA and sent for smelting or recycling.

Fire Control Facilities

MLAAP has contracted the City of Milan Fire Department to respond to any fires and emergencies onsite.

Fire hydrants are located near the WMA for fire department use. Additional fire-fighting equipment will be in the OD unit to control small fires. The areas around the pits at the OD Unit are maintained free of vegetation to reduce the probability of fires at those locations.

B-2(g) Additional Topographic Map Information

Miscellaneous Thermal Treatment Units, Property Boundaries, and Point of Compliance Location

The Army property is primarily surrounded by rural residential neighborhoods. The City of Milan and the University of Tennessee Agricultural Experiment Station share the northwest boundary, and the Tennessee Army National Guard shares much of the remaining boundaries. The Army property boundaries are identified on Figures B-1 and B-5.

The WMA meets the requirements of 40 CFR 264.97(3)(b), which states that one area with a single groundwater monitoring system can be used to contain more than one regulated unit, provided that provisions for sampling the groundwater in the uppermost aquifer will enable detection and measurement of hazardous constituents at the compliance point in the uppermost aquifer. The WMA is illustrated on Figure B-8 by a red line circumscribing the regulated MTTU.

The point of compliance, shown in Figure B-8, is a vertical surface located at the hydraulically downgradient limit of the WMA that extends down into the uppermost aquifer underlying the regulated units. The proposed groundwater monitoring system designated four monitoring wells along the point of compliance to monitor groundwater contamination downgradient of the OB/OD units.

Uppermost Aquifer and Hydraulically Connected Aquifers

Claiborne and Wilcox sands are the principal sources of groundwater in western Tennessee. Although groundwater is also abundant in the underlying Cretaceous sediment, it has not been necessary to tap that deeper source in most areas. The major unconfined aquifer in the Milan area is the sands of the Claiborne and Wilcox groups, which yields groundwater to private, municipal, and industrial wells in the area. Groundwater flow in that aquifer generally follows the direction of the regional dip of this sand, with a gradient of approximately 20 feet per mile to the northwest. Clay units (i.e., the Porter Creek Clay Formation, the Clayton Formation, and the Owl Creek Formation) dominate a 350-foot thick stratigraphic section below the Wilcox Group to the top of the cretaceous McNairy Sand. The McNairy Sand is a thick body of sand with lenses interbedded with clay and lignite. Overlain by the clay units that serve as the confining layer, the McNairy Sand makes up the deep artesian aquifer that underlies the MLAAP.

The WMA is situated on the Memphis Sands of the Claiborne Group of Tertiary age in the Gulf Coastal Plain of western Tennessee. The Memphis Sands crops out in a broad belt across western Tennessee, but is covered in

most places by fluvial deposits of Tertiary and Quaternary age, and loess and alluvium of Quaternary age. The Memphis Sands is the uppermost aquifer beneath MLAAP and the WMA. The Flour Island Formation of the Wilcox Group is the lower confining unit for the Memphis Sands and consists predominantly of clay and silts. Based on a January 1993 ICF Kaiser Engineers Report (Hydrogeologic Investigation Report, MLAAP, Feasibility Study), the Flour Island Formation is estimated to average 50 feet thick across MLAAP from north to south.

A boring log from a MLAAP water well, drilled on July 7, 1980, by the U.S. Army Corps of Engineers, Mobile District, to a depth of 1,010 feet, indicates a clay-confining unit begins at approximately 250 feet below ground level (bgl). The clay unit extends to 475 feet bgl, giving an overall clay thickness of over 225 feet. This confining clay unit is the Porters Creek Clay, the unit below the Wilcox Group and above the McNairy Sands.

Monitoring wells placed in the vicinity of the WMA, monitor the aquifer above the 225-foot confining unit. There appears to be no threat of interconnection of the aquifer beneath the MTTUs and the McNairy Sands.

Groundwater Flow Direction

The primary groundwater flow direction at MLAAP follows the direction of the regional dip of the Memphis Sands sequence, with a gradient of approximately 20 feet per mile to the north-northwest toward the north border of the MLAAP and the Rutherford Fork of the Obion River.

Location of Groundwater Monitoring Wells

Since 1995, 20 wells have monitored the historical contamination in and around the OB and OD units. Figure B-10 shows the locations of the 20 wells and identifies the six monitoring wells (MI019b, MI250, MI252, MI259, MI264, and MI296) that were sampled beginning in calendar year 2008 to evaluate changes in site conditions and to identify any releases that may have occurred from the OB and OD units. These wells have since been sampled and monitored semi-annually.

Extent of any Groundwater Contaminant Plume

Based on groundwater sampling in and around the WMA, MLAAP has determined that the contamination is from nitro bodies (explosives). It is believed that contamination in the downgradient monitoring wells is from a former OD Unit in addition to disposal sites in the upgradient background area. The primary contaminants of concern (COCs) include cyclotrimethylenetrinitramine (RDX), trinitrotoluene (TNT), and 1,3,5-trinitrobenzene (TNB) with secondary COCs octogen (HMX), dinitrobutane (DNB), 2,4-DNT, 2,6-DNT, tetryl, and perchlorate. However, the only contaminants exceeding the current health advisory set by the USEPA at the WMA are TNT and RDX, both upgradient and downgradient.

Figures B-11a, B-11b, B-12a and B-12b display known areas of groundwater contamination in and around the WMA. The groundwater contamination is associated with the past operations at the former OB Unit, OD Unit and other portions of the WMA. The areas of groundwater contamination are indicated by isocontours.

Additional groundwater contaminant plumes at MLAAP are being investigated and/or remediated under the FFA. The groundwater contamination at those locations is not associated with the WMA but is depicted on the maps for reference.

Location of Unsaturated Zone Monitoring

No unsaturated zone monitoring is conducted; therefore, this section is not applicable.

B-3 DESCRIPTION OF TREATMENT UNITS

B-3(a) Location

Table B-1 outlines the distance from the OD units to the nearest property boundaries, nearest buildings onsite and offsite, nearest public roads, nearest passenger railroads, and closest receptor within the property boundary.

Table B-1
Distances To/From OB/OD Units

Location	Distance (in feet)
OD Unit	
Property Boundary	4,750
Building Onsite	500
Building Offsite	8,050
Public Roadway	7,875
Passenger Railroad	>125,000
Receptor Human	500 ¹
Receptor Environmental	0

Note:

¹ Minimum distance operator personnel are sheltered in earthen covered barricade W-53 during treatment

B-3(b) Design

Open detonation was conducted in both aboveground and subsurface configurations. The OD Unit is an approximately 40-acre area containing up to 20 earthen pits and East and West shooting fields for subsurface treatment. Subsurface treatment took place in earthen pits that are approximately 20 to 25 feet in diameter, 10 to 15 feet deep (shaped like an inverted cone), and approximately 90 feet apart. The excavations are entirely natural earth (native soils) with enough silt and clay to act as binders and provide a stable configuration. The soil also contains sufficient sandy material to ensure effective cover and reduce blast noise during treatment. Depth to bedrock averages greater than 600 feet, and depth to groundwater is 80 to 100 feet bgl, based on static groundwater elevations in monitoring wells at the site.

Aboveground open detonation was used on munitions items that were too dangerous to manage via subsurface treatment. The damaged munitions were moved to a clear area in a shooting field near, but not adjacent to, the shooting pits. Aboveground detonations are frequent but are limited to 15 pounds maximum net explosive weight (NEW) at any event unless approved by MLAAP Commander's Representative.

Ancillary equipment associated with the OD Unit consists of an earthen-covered, steel-reinforced concrete structure used as a firing control/observation post. A temporary magazine will be constructed for material storage. Various earth-moving equipment, typically two to three bulldozers and a pan scraper, were also used at the OD Unit. The OD Unit used underground cable from the earthen-covered, firing control/observation structure to two terminal boxes. Cables were then laid aboveground to the individual pits to allow control of the treatment process.

B-3(c) Operation

Active operation of the OD unit is no longer occurring, but closure activities will be conducted to close out the site.

Unexploded ordnance (UXO) hazards are unique and require a greater level of awareness and attention-to-detail than everyday projects. The following references contain comprehensive procedures for conducting demolition operations and should be referred to for any situation associated with destruction of MEC.

- OSHA General Industry Standards, 29 Code of Federal Regulations (CFR) 1910 (OSHA, 1974)
- Rothenbuhler Remote Firing Device (RFD) Operating Manual ("RFD Operating Manual")
- Engineer Manual (EM) 385-1-97 (U.S. Army Corps of Engineers [USACE], 2013)

General steps in the demolition operations include MEC identification and reporting, notifications, personnel selection, weather monitoring, pre-operational safety, placement of any necessary engineering controls, shot priming, electronic initiation, post detonation inspections, and final documentation and notifications. A more in-depth explanation of this operation can be seen in SOP G-21.

B-3(d) Maintenance, Monitoring, Inspection

All demolition process operations at the OD Unit are inspected before, during, and after each use. Daily safety and quality control inspections are completed to ensure suitability for continued operations. Those inspections also include the associated structures and communication equipment, which is essential to OD Unit operations. The inspection logs are maintained by Site Management. Copies will be stored at the Army Environmental office as well as office space used by contractor operating this permit.

During operation (establishment of any engineering controls, configuration of shot, placing of shot in firing position, preparation of firing, actual firing, and post-detonation inspections) the process is monitored. The Demolition Supervisor reports any abnormalities and/or problems to the Site Management. Inspections and monitoring that reveal any requirements (outside minor adjustments) are reported immediately to Site Management.

B-3(e) Closure

In the event that the OD Unit is to be closed, MLAAP will follow all procedures outlined in Section J.

B-4 FACILITY LOCATION INFORMATION

The following are provided in accordance with 40 CFR 270.14(b)(11) relating to the requirements for facility location information.

B-4(a) Seismic Requirements

MLAAP is an existing facility and its political jurisdiction (state of Tennessee) is not listed in Appendix VI to 40 CFR Part 264; therefore, the requirements for the seismic standard do not apply to this Permit Application.

B-4(b) Floodplain Standard/100-Year Flood Plain Area

The location of the 100-year floodplain in the vicinity of MLAAP is shown on Figure B-13a and B-13b.

The 100-year floodplain elevation nearest the WMA is approximately 400 feet above mean sea level (msl) and approximately 5,000 feet downgradient of the WMA. The ground surface in the vicinity of the WMA generally ranges from 475 feet above msl at the OD Unit.

B-5 TRAFFIC PATTERNS AND VOLUMES

The OD Unit is approximately 4.2 miles south of the Highway 104 and Plant Route 23 intersection. There is only one entrance/exit at the unit that allows access from other portions of MLAAP. Figure B-5 shows the locations of the internal access roads and adjacent offsite roads.

B-5(a) Vehicle Information and Quantity of Waste Moved Per Shipment

Traffic at the OD Unit averages 31 vehicles per working day entering and leaving. Internal traffic consists of remote-operated earth-moving equipment and limited rubber-tire vehicles.

B-5(b) Waste Transfers and Pickup Stations

Anyone who generates, handles, transports, treats, stores, or disposes of MDEH, hazardous waste, and/or MDAS, including technicians, EHS personnel, and people involved with related tasks like recordkeeping, labeling, and waste management oversight will have RCRA training. All transfer of MDEH or MDAS within the WMA are conducted by personnel trained in hazardous waste management, spill control, and use of proper tools and equipment for explosives handling, as described in Section H of this permit application. Waste transfer within the WMA is carried out by truck, forklift, and/or hand and at all times under the observation of trained and experienced personnel.

B-5(c) Traffic Control

Only MLAAP vehicles and authorized contractor vehicles are allowed to enter the WMA. All traffic entering the OD Unit is controlled by an outer vehicle crash gate and inner chain-link fence gate, which can only be opened and closed by authorized personnel. The entrance at the OD Unit is protected by a gate that is locked when the area is not in use. A security police mobile unit patrols the OD Unit.

B-5(d) Road Surfacing and Load-Bearing Capacity

Figure B-5 shows the access roads to MLAAP and the roads located within the plant boundary. B-4 and B-7a shows internal roads at and within 1,000 feet of the OD Unit. All roads leading to the WMA are paved with asphaltic concrete. Internal roads at the WMA are surfaced with either asphaltic concrete or gravel. All roads are maintained and capable of handling heavy trucks and equipment. No bridges are in the WMA, only circular steel or concrete culverts. Gravel roads within the WMA are subject to problems during severe weather conditions but most activities are not conducted during those conditions; therefore, the roads do not provide a hazard for or threat to the movement of hazardous waste or emergency vehicles.

SECTION C

WASTE CHARACTERISTICS & ENVIRONMENTAL MONITORING

The information in this section is submitted in accordance with the requirements of 40 Code of Federal Regulations (CFR) 264.13(b) and (c), 40 CFR 270.14(b)(2) and (3), and Tennessee Hazardous Waste Management Rules (THWMR) 0400-12-01-.07(5)(a)(a)(ii) and (iii), 0400-12-01-.06(2)(d)2 and 3.

Hazardous wastes are generated at Milan Army Ammunition Plant (MLAAP) as a result of current facility maintenance activities. Additional hazardous waste wastes to be generated will be from cleanup activities at the ADA as well as building demolition activities as the Army divests and closes down the facility. These hazardous wastes are described below and summarized in Table C-1.

C-1 PHYSICAL AND CHEMICAL CHARACTERISTICS OF WASTES AND RESIDUES

MLAAP generates and treats waste munitions including Propellants, Explosives and Pyrotechnics (PEP). The majority of hazardous waste to be treated will be OD unit debris that contain explosive munitions components.

Propellants generated and treated at MLAAP may include: single based propellants (chiefly nitrocellulose); double-based propellants (usually nitrocellulose); and nitroglycerine and triple based or complex propellants (typically consisting of nitrocellulose, nitroglycerine and one or more additional nitrated compounds such as dinitrotoluene or nitroguanidine). These propellants also contain stabilizers to reduce the risk of self-ignition, along with other additives to enhance serviceability, such as flash suppressants.

MLAAP formerly processed explosive compounds during the manufacture of ammunition. Each type of ammunition varies in type and quantity of explosive. The types of explosive compounds processed included cyclotetramethylene tetranitramine (HMX), cyclotrimethylene trinitramine (RDX), and trinitrotoluene (TNT); or complex blends of these explosives.

C-1(a) Non-Listed Reactive (Waste PEP, Munitions, and Munitions Components)

Waste munitions and munitions components are rejected ammunition and ammunition components; meaning, they no longer meet MLAAP and/or Department of Defense (DOD) standards. These wastes munitions, when found in areas outside the WMA, are collected in containers of various types and stored prior to thermal treatment. The waste munitions (and components) are generally Department of Transportation (DOT) Class 1 Explosives and are therefore assumed to be reactive without any analysis requirements.

Due to the nature of many types of munitions, traditional test methods may not be applicable due to the design and configuration of the subject. In many cases, testing would be unsafe, potentially damaging to equipment, and could result in injury or death to analytical personnel. In cases dealing with these types of munitions, waste analysis may be obtained from the manufacturer's information, UXO (Unexploded Ordnance) professionals, military Technical Manuals, MIDAS (Munitions Items Disposition Action System), and/or Safety Data Sheets (SDS's).

The estimated quantities of hazardous waste to be treated will be significantly less per year than when the facility conducted standard treatment activities. While the OB/OD units previously may have treated 1,250,000 pounds per year of waste explosive and propellant (D003 and D030) and 40,000 pounds per year of explosive sump scrap (K044), the only treatment to be conducted will be treatment of explosives and munitions components encountered during closure activities.

C-1(b) Ash from Burning Ground

This waste stream is being kept open temporarily, but will be closed in the near future. Ash is no longer generated from Burning Ground activities since the Burning Ground has been decontaminated and closed.

Historically, the burning of explosive and explosive-contaminated waste streams generated a residual ash that may be Extraction Procedure (EP) — Toxic hazardous waste. Waste PEP was open burned in elevated burn pans. Any metal parts generated from open burning of these wastes was transported to the explosive-contaminated burn pan and re-burned. Solid waste that is explosive-contaminated was open burned in burn pans. All ash from open burning was analyzed in accordance with the Toxicity Characteristic Leaching Procedure (TCLP) for EP-Toxic metals and explosive nitrocompounds. If analytical results showed that the waste was not EP-Toxic, then the ash was non-hazardous, and was disposed of in MLAAP's onsite permitted landfill under a Special Solid Waste Permit. If analytical results showed the ash was EP-Toxic, it was managed and stored as hazardous waste in the hazardous waste container storage units.

Table C-1
Hazardous Wastes Currently Registered with TDEC

TDEC Waste Stream Number	Waste Name	EPA Waste Codes	Treatment /Disposal Location	Onsite Treatment Area
No. 3	Non-listed Reactive (Waste PEP, Munitions, and Munitions Components)	D003, D030	Onsite	Ammunition Destruction Area
No. 7	Ash	D004, D005, D006, D007, D008	Offsite	Area W Burning Pans (To be closed in near future)
No. 11	Paint Sludge and Thinner	D001, D007, D008, F003, F005	Offsite	NA
No. 12	Spent Motor Oils	D006, D007, D008	Offsite	NA (To be Closed in near future)
No. 38	Waste Fluorescent Bulbs	D009	Offsite	NA
No. 40	Waste Lab Pack (Excess Chemicals)	LABP (D001, D002, D005, D035, U080, U122)	Offsite	NA
No. 58	Waste Adhesive/Cement	D001	Offsite	NA
No. 74	Varsol	D001	Offsite	NA
No. 77	Waste Sodium Hydroxide	D002	Offsite	NA
No. 81	Waste Paint Chips and Debris	D005, D006, D007, D008, D009	Offsite	NA
No. 88	Arsenic Contaminated Wood	D004	Offsite	NA
No. 89	Waste Aerosols Flammable	D001	Offsite	NA

C-1(c) Paint Sludge and Thinner

MLAAP often uses paints, hardeners, and thinners for various maintenance activities. As the wastes are generated site-wide, once a waste is generated, it is taken directly to the facility's satellite accumulation area in J-123. For practical purposes, the J-123 satellite accumulation area is the point of generation. Once the container is filled, it is transferred to the central accumulation area in another section of J-123. This waste typically has the following waste codes: D001, F003, and F005.

C-1(d) Spent Oils

MLAAP does not produce many hazardous waste spent oils, rather, the facility manages most of its used oils under the Used Oil Program. This waste stream is being kept open should the facility need to utilize this waste stream in the future.

C-1(e) Waste Fluorescent Bulbs

MLAAP no longer produces hazardous waste fluorescent bulbs, rather, the facility has transitioned from utilizing a bulb crusher to managing its fluorescent bulbs as Universal Waste. This waste stream is being kept open should the facility need to utilize this waste stream in the future.

C-1(f) Waste Lab Pack (Excess Chemicals)

MLAAP often uses miscellaneous chemicals for various maintenance activities. Additionally, through closure and divestment activities, excess chemicals are earmarked for disposal. As the waste is generated site-wide, it is taken directly to the facility's central accumulation area in J-123. For practical purposes, the J-123 central accumulation area is the point of generation. Due to the variety of chemicals, the wastes are categorized as "Lab Packs" and may carry any number of waste codes. Lab Packs are properly packed, labeled, and stored in Building J-123.

C-1(g) Waste Adhesives/Cement

MLAAP often uses adhesives and cements for various maintenance activities. The waste adhesives/cements generated onsite typically exhibit ignitability characteristics and carry a D001 waste code.

C-1(h) Varsol

MLAAP historically used varsol for various maintenance and production activities. The facility's closure and divestment activities generated a significant amount of varsol waste. As such, a waste stream was opened for varsol. This waste stream carries a D001 waste code for ignitability.

C-1(i) Waste Sodium Hydroxide

MLAAP actively uses sodium hydroxide for drinking water treatment to adjust pH. From time to time, the facility will need to dispose of waste sodium hydroxide, which carries a D002 waste code for corrosivity.

C-1(j) Paint Chips and Debris

Paint Chips and Debris from MLAAP are typically generated from building demolition or renovation activities. As the facility continues to divest, former production lines will be demolished, which will likely generate paint chips and debris. This type of waste often carries D005, D006, D007, D008 and D009 waste codes for barium, cadmium, chromium, lead, and mercury, respectively.

C-1(k) Arsenic Contaminated Wood

Arsenic Contaminated Wood from MLAAP is generated from building demolition activities. As the facility continues to divest, former production lines will be demolished, which will likely generate arsenic contaminated wood. This type of waste often carries D004 waste code for arsenic.

C-1(l) Waste Aerosols Flammable

MLAAP no longer manages its flammable aerosols as hazardous waste, rather, the facility now manages its flammable waste aerosols as Universal Waste. This waste stream is being kept open should the facility need to utilize this waste stream in the future.

C-1(m) Waste Storage

Wastes outlined above are typically stored in Building J-123. In addition, MLAAP stores de-energized electrical equipment containing Polychlorinated Biphenyl's (PCB's) and waste friable asbestos in Building J-123. No waste munitions are stored in Building J-123.

Munitions to undergo thermal treatment at the Ammunition Destruction Area (ADA) are already present at the ADA. During closure activities, a temporary magazine may be erected for temporary storage at the munitions await treatment.

C-2 CHEMICAL ANALYSIS

EP-Toxicity analysis via TCLP for metals and explosive constituents are performed on many wastes. These analyses are performed at various commercial. Test methods followed are listed in Table C-2.

Analysis and test methods other than those outlined in Table C-2a will not be required. Military ammunition assembly and chemical composition are well defined and must meet military standards.

C-3 WASTE ANALYSIS PLAN

The Waste Analysis Plan (WAP) is designed to describe the procedures used to obtain chemical and physical information and data on wastes to ensure proper transportation, treatment, and disposal. The WAP details parameters for analysis and supporting rationale, test methods, sampling methods, and frequency of analysis, along with other documentation for additional requirements, as pertinent to the OD unit.

C-3(a) Parameters and Rationale

Safety hazards are posed by handling and testing waste munitions, which contain relatively high levels of explosives. Various other wastes may require testing to determine hazardous waste characteristics and constituents.

A copy of the MLAAP's complete WAP is included in Appendix C-1.

C-3(b) Analytical Methods

Table C-2a identifies the test methods to be employed in MLAAP's WAP. In all cases, analytical data will be generated under Quality Assurance procedures specified for the method in SW-846 or other analytical methods in 40 CFR Part 136.

Table C-2a
Waste Sample Analysis Requirements

TDEC Wastestream Number	Waste Name	Minimum Sample Parameter(s)	Analytical Method	Comments
No. 3	Non-listed Reactive	Explosives, Reactivity	EPA 8330A, ASTM	The chemical composition of waste munitions and munition components is known and the munitions are also known to be reactive. In most cases no laboratory analyses are needed to determine physical or chemical characteristics. Before sampling and analysis is performed, every avenue available to determine the waste composition will be exhausted. In many cases, due to the nature of the waste, sampling and analysis may not be possible. In this case the generator site will be contacted for possible return of the waste munitions.
No. 7	Ash	Explosives, RCRA Metals, Card Gap/DDT, Paint Filter	EPA 8330A, EPA 6010C, EPA 7470A, ASTM, EPA 9095B	
No. 11	Paint Sludge and Thinner	Flashpoint Volatiles RCRA Metals	EPA 1010 EPA 8260B EPA 6010C	Waste is usually defined from the SDS's that are on file for the products added to the container.
No. 12	Spent Motor Oils	Flashpoint, RCRA Metals	EPA 1010, EPA 6010C	
No. 38	Waste Fluorescent Bulbs	RCRA Metals	EPA 6010C	
No. 40	Waste Lab Pack (Laboratory Chemicals)	Various Reagents, etc.	NA	Determined by Content. Many wastes are defined from the SDS's that are on file for the products added to the container.
No. 58	Waste Adhesive/Cement	Flashpoint, BTU's/lb, Volatiles	EPA 1010, EPA 8260	Waste is usually defined from the SDS's that are on file for the products added to the container.
No. 74	Varsol	Flashpoint, BTU's/lb	EPA 1010	Waste is usually defined from the SDS's that are on file for the products added to the container.
No. 77	Waste Sodium Hydroxide	pH	EPA 9040B	Waste is usually defined from the SDS's that are on file for the products added to the container.
No. 81	Waste Paint Chips and Debris	Explosives RCRA Metals	EPA 8330A EPA 6010C	
No. 88	Arsenic Contaminated Wood	Explosives RCRA Metals	EPA 8330A EPA 6010C	
No. 89	Waste Aerosols Flammable	Flashpoint, BTU's/lb	EPA 1010	Waste is usually defined from the SDS's that are on file for the products added to the container.

Table C-2b Waste Sample Strategies and Frequencies							
TDEC Wastestream Number	Waste Name	Sample Preservation	Sample Container	Holding Time	Sample Type	Sample Equipment	Sample Frequency
No. 3	Non-listed Reactive	ICE (0-4 Degrees C)	Fiber	14 days	Grab	Scoop	As required where process knowledge is not sufficient
No. 7	Ash	ICE (0-4 Degrees C)	Plastic	14 days	Grab	Scoop	Every Batch
No. 11	Paint Sludge and Thinner	ICE (0-4 Degrees C)	Glass	14 days	Grab	coliwasa	As required where process knowledge is not sufficient
No. 12	Spent Motor Oils	ICE (0-4 Degrees C)	Glass	14 days	Grab	coliwasa	As required where process knowledge is not sufficient
No. 38	Waste Fluorescent Bulbs	ICE (0-4 Degrees C)	Plastic	28 days	Grab	Trier, scoop, tiered thief	Every batch of crushed bulbs
No. 40	Waste Lab Pack (Laboratory Chemicals)	ICE (0-4 Degrees C)	Glass, Plastic	14 days	Grab	coliwasa	As required where process knowledge is not sufficient
No. 58	Waste Adhesive/Cement	ICE (0-4 Degrees C)	Glass	14 days	Grab	Coliwasa, scoop	As required where process knowledge is not sufficient
No. 74	Varsol	ICE (0-4 Degrees C)	Glass	14 days	Grab	coliwasa	As required where process knowledge is not sufficient
No. 77	Waste Sodium Hydroxide	ICE (0-4 Degrees C)	Glass	14 days	Grab	coliwasa	As required where process knowledge is not sufficient
No. 81	Waste Paint Chips and Debris	ICE (0-4 Degrees C)	Glass	14 days	Grab	Trier, scoop, tiered thief	As required where process knowledge is not sufficient
No. 88	Arsenic Contaminated Wood	ICE (0-4 Degrees C)	Glass	14 days	Grab	Trier, scoop, tiered thief	As required where process knowledge is not sufficient
No. 89	Waste Aerosols Flammable	NA	NA	NA	NA	NA	NA

C-3(c) Sampling Methods

Information provided in Table C-2a and the WAP in Appendix C-1 provide adequate information on the sampling methods selected for the wastes generated or received at MLAAP.

C-3(d) Frequency of Analysis

Information provided in Table C-2b and the WAP in Appendix C-1 provide adequate information on the sampling frequency for the wastes generated or received at MLAAP.

C-4 ADDITIONAL REQUIREMENTS PERTAINING TO BOILER/INDUSTRIAL FURNACE FACILITIES

These requirements are not applicable to MLAAP's thermal treatment units.

C-5 ADDITIONAL REQUIREMENTS FOR WASTE SHIPPED OFFSITE FOR DISPOSAL

Further analyses may be required for a waste to be accepted for offsite disposal. Laboratory arrangements must include data needed for completion of a Waste Analysis Profile and, at a minimum, must include sufficient information to generate the proper DOT shipping name, designation of reportable quantities of hazardous substances, and any other data required by the disposal company. Sufficient analytical data must be obtained to properly complete a shipping manifest for all offsite shipments of hazardous waste.

C-5(a) Procedure to Determine the Identity of Each Movement of Waste Managed at the Facility

No longer applies as MLAAP no longer receives waste from offsite generators.

C-5(a)(1) Procedures for Receiving Wastes from Offsite Generators

No longer applies as MLAAP no longer receives waste from offsite generators.

C-5(a)(2) Incoming Waste Shipment Procedures

No longer applies as MLAAP no longer receives waste from offsite generators.

C-5(b) Minor Paper Work Deficiencies

No longer applies as MLAAP no longer receives waste from offsite generators.

C-5(c) Major Paper Work Deficiencies

No longer applies as MLAAP no longer receives waste from offsite generators.

C-5(d) Minor Shipping Problems

No longer applies as MLAAP no longer receives waste from offsite generators.

C-5(e) Major Shipping Problems

No longer applies as MLAAP no longer receives waste from offsite generators.

C-5(f) The Sampling Method which will be used to obtain a Representative Sample of the Waste to be identified

In most cases, sampling of waste munitions for laboratory analysis will not be required. As all wastes to be treated at MLAAP's OD Unit will be generated from closure activities at the OD Unit, no unknown or unidentified wastes will be treated. .

In any case if actual sampling and analysis of waste munitions is required, MLAAP will employ the following methodology: before sampling and analysis is performed, every avenue available to determine waste composition will be exhausted. In many cases, due to the nature of the waste, sampling and analysis may not be possible.

C-5(f)(1) Bulk Packaged Explosive, Propellants, and/or Pyrotechnics

Bulk packaged hazardous waste (explosives, propellants and or pyrotechnics) are typically packed in cardboard boxes with water proof liners, paperboard drums with a water proof or anti-static liner or non-sparking metal containers. The waste would be assumed to meet the definition of a reactive waste (waste code D003); therefore the minimum number of samples and amount of sample that would provide a representative composite would be collected. In the case of bulk materials, the minimum representative number of a sample would be one complete item representative of that group (lot or part (DoDAC) number), while a minimum amount of bulk material would be 250 grams. It must be noted that the safety of site sampling personnel and property will be of major concern. Prior to sampling, all waste munitions will be moved to a remote, safe location. All explosive ordnance items to be sampled would be moved to a remote, safe location prior to sampling.

C-5(f)(2) Complete Military Munitions or Munitions Components

Complete military munitions include units that contain propellant, a primer device or a projectile containing an explosive with a fuze device. Typically, all conventional military munitions contain one or more of the above components. These units are made to withstand the rigors of battle, therefore materials contained in these munitions are not often readily accessible. The DoD manufactures munitions and munition components to exacting standards and tracks each part and material used in their manufacture. Sampling and analysis of any complete munition and/or

component would be a very rare event as no waste will be received from offsite and as all waste to be treated at MLAAP's OD Unit will be generated from closure activities at the OD Unit. (Note: It cannot be overemphasized that the composition of these munitions is well documented and the need for sampling and analysis would be rarely, if ever, required).

C-6 ADDITIONAL REQUIREMENTS FOR IGNITABLE, REACTIVE, AND INCOMPATIBLE WASTES

Ignitable wastes are identified by reference to SDS, Sax's Dangerous Properties of Industrial Materials, National Fire Protection Association's Fire Protection Guide on Hazardous Materials, and AMC-R-385-100 which is the Army's Safety Manual. Many wastes stored at MLAAP are not compatible, hence, requirements for segregation of incompatible wastes are applicable. All storage is conducted in compliance with AMC-R-385-100 and applicable rules governing the storage of incompatible waste in Tennessee.

C-7 COMPATIBILITY OF WASTE AND CONTAINER

Laboratory acid and metals waste is collected in plastic containers that are resistant to the corrosive acids. All solvent waste, including waste mixed thinners, and waste paint-related material are stored in 55-gallon steel drums, 5-gallon steel cans, or other DOT-compliant packaging.

Waste munitions are typically stored in fiber, wood, and/or metal containers. These containers are the units used for shipment of these items and are also used in the field. Bulk propellants and explosives are stored in fiber boxes and drums, non-sparking metal containers, and lined wooden boxes. Waste munitions are considered to be in a container if there are no open explosives since the munition body is considered the container.

C-8 ADDITIONAL WASTE ANALYSIS REQUIREMENTS PERTAINING TO LAND DISPOSAL RESTRICTIONS

Waste Characteristics

Analytical data or information from knowledge of the waste is used to determine if the waste is restricted under 40 CFR 268. If generator knowledge is used, all supporting data is maintained in the operating record.

Solvent Wastes:

Wastes codes F001 through F005 for spent solvent wastes are restricted from land disposal under 40 CFR 268.30 unless the wastes meet applicable treatment standards or an exemption has been granted.

Land Disposal Restrictions for Soils exhibiting the toxicity characteristic for metals and containing PCBs

The following hazardous wastes are prohibited from land disposal under 40 CFR 268.32, unless the wastes meet applicable treatment standards or an exemption has been granted.

- Liquid hazardous waste with a pH less than or equal to 2.0
- Liquid hazardous waste that are primarily water and contain hydrophobic organic chemicals (HOCs) in total concentration greater than or equal to 1,000 mg/L
- Non-liquid hazardous wastes containing HOCs in total concentration greater than or equal to 1,000 mg/kg

Method 9095 (Paint Filter Test) in SW-846 is used to determine if the waste is a liquid. Test methods listed in Table C-2a are used to analyze wastes.

First-Third, Second-Third, and Third-Third Wastes:

Wastes listed in 40 CFR 268.10 are prohibited from land disposal unless the wastes or waste extracts meet applicable treatment standards or an exemption has been granted pursuant to 40 CFR 268.5 or 268.6. These wastes are analyzed using methods given in Table C-2a-b.

C-9 QUANTITY AND PHYSICAL AND CHEMICAL CHARACTERISTICS OF THE WASTE AND PRODUCTS OF COMBUSTION

Refer to the air dispersion modeling report in Section K.

C-10 MONITORING

The objective of this groundwater monitoring plan is to establish baseline conditions from which potential future releases can be monitored at the regulated unit within the WMA at the MLAAP. This Groundwater Monitoring Plan was prepared in accordance with 40 CFR Parts 264 and 270.

Six monitoring wells were selected in and around the WMA to establish an upgradient background monitoring area and a downgradient (release detection) area, as illustrated in Figure C-4. The wells are identified as MI019B, MI250, MI252, MI259, MI263, and MI296. Groundwater samples will be collected semi-annually to evaluate changes in site conditions and to assess potential releases from the WMA.

C-10(a) Existing Groundwater Monitoring Data

The WMA includes the OB/OD units, and former thermal treatment units used for conventional military munitions testing, treatment, and disposal since the mid- to late 1940s. Groundwater monitoring at the MLAAP was either non-existent or inconclusive prior to 1995. The installation of the present groundwater monitoring system around the WMA, in conjunction with the Remedial Investigation/Feasibility Study (RI/FS), was the first major effort conducted to identify site conditions. Because munitions were the only materials treated in the WMA, the groundwater COCs throughout the area consist primarily of heavy metals, explosives, propellants, and associated degradation products.

Groundwater monitoring began 1995 and has continued through 2025. During the first year, monitoring was conducted quarterly, but was reduced to semi-annually thereafter. Well MI019 was damaged and replaced with Well MI019b. MI019b was monitored quarterly in 2009 to establish background and then reduced to semi-annual monitoring. That historical monitoring data provided a wealth of information concerning the groundwater contamination resulting from past activities; but was collected 50 years after treatment had begun at the MLAAP and over 10 years after the OB/OD units became operational. Statistical analysis was performed on all data to provide a baseline to which future data may be compared.

For the purposes of this permit application, the 2007 groundwater monitoring data will be used as the baseline for comparison to assess a future site release to groundwater, with the exception of MI019. Monitoring well MI019 was damaged during the 2007 groundwater sampling and has been replaced with MI019b. MI019b was monitored quarterly in 2009 to establish background.

Site-specific information and data were taken from the following reports generated for the WMA:

- (1) Final Technical Report
Geotechnical Report
MLAAP Environmental Survey, Phase II
Roy F. Weston, Inc. (September, 1983)

- (2) Investigation and Engineering Analysis for Remedial Actions
MLAAP Open Burning Grounds
Post, Buckley, Schuh & Jernigan, Inc. (February, 1988)

- (3) Draft Final Remedial Investigation Report
MLAAP Remedial Investigation Southern Study Area (OU#5)
Fluor Daniels, Inc. (March, 1998)

- (4) USGS Water Resources Investigations Report 89-4120.
Fort Pillow Sand in western Tennessee
Parks, W.S., and Carmichael, J.K. (1990)

- (5) USGS Professional Paper 448-B
General Geology of the Mississippi Embayment
Cusing, E.M., Boswell, E.H., and Hosman, R.L. (1964)

- (6) USGS Professional Paper 1336-B
The New Madrid Earthquakes: An Engineering-Geologic Interpretation of Relict Liquefaction
Obermeier, Stephen F. (1989)

These reports are available for review at MLAAP. The information presented in this section is specific to the WMA. Other studies conducted at MLAAP show little change in geology or hydrology across the entire facility as the WMA appears to be comparable with MLAAP's overall geology and hydrology.

Depth of Water Beneath the Unit

The major controls of groundwater movement in this unconfined aquifer are the dip of bedding, surface topography, and surface recharge and discharge patterns. On a large scale, there are no abrupt hydrologic boundaries in the aquifer onsite. Clay lenses and clay-rich zones may locally affect vertical groundwater flow, and stratification tends to make vertical conductivities lower than horizontal conductivities.

The depth to groundwater within and surrounding the WMA has been monitored by 20 monitoring wells since 1995. Data show minimal fluctuation in the depth to groundwater within each well. The 2007 data show a depth to groundwater that varied from 78.00 to 92.16 feet below ground surface (bgs) at the WMA. Groundwater levels in upgradient wells outside the WMA ranged from 71.48 to 96.31 feet bgs. Groundwater levels in downgradient wells ranged from 78.00 to 122.28 feet bgs. The variation across the site is likely due to lateral variation in the site lithology.

Description of Uppermost Aquifer and Aquifers Hydraulically Interconnected Beneath the Facility Property

See Section B of this Permit Application for detailed information regarding the aquifers beneath the WMA and MLAAP.

Groundwater Flow, Direction, Rate, and Source of Information

Static water levels were measured over 12 years from MLAAP wells. Piezometric data in Table C-3 includes information obtained from the October and November 2009 groundwater monitoring events, which was used to determine the baseline hazardous contamination levels at the WMA.

**Table C-3
2009 Piezometric Data
Milan Army Ammunition Plant — Milan, Tennessee
October/November 2009**

Well Identification	Total Depth of Well	Top of Casing Elevation	Depth to Water (feet)	Potentiometric Surface Elevation (feet)
MI019B	118.91	481.00	71.70	409.30
MI270	95	494.80	86.02	408.78
MI271	200	494.50	86.05	408.45
MI272	122.5	507.20	98.25	408.95
MI277	121.04	499.60	80.36	419.24
MI296	102	488.90	82.70	407.25
MI250	128.86	518.00	112.44	405.56
MI252	137.81	511.30	105.96	405.34
MI256	117.8	504.50	97.25	407.25
MI259	84.40	480.60	72.61	407.99
MI261	105.46	499.90	93.31	406.59
MI263	136.70	528.90	123.42	405.48
MI277	121.3	499.60	80.36	419.24
MI278	128.66	429.80	21.75	408.05
MI279	152.81	532.30	128.90	403.40
MI281	200	507.70	105.81	401.89
MI283	200	499.50	98.88	400.62
MI285	200	482.90	83.84	399.06
MI287	112.45	497.60	91.20	406.40

These piezometric contours are presented in Figures C-3 and C-4 and were contoured using a standard interpolation program. Information from Figures C-3 and C-4 was used to estimate the gradient of groundwater flow beneath the site. The gradient is equal to the difference in elevation change (head) divided by the distance between two points measured along the flow line perpendicular to the piezometric contour lines. Data show that groundwater flows north-northwest, with some local variation in the upper part of the aquifer due to terrain, surface drainage, and

pumping. Groundwater flow direction also seems to follow the direction of the regional dip of this sand sequence, with a gradient of approximately 20 feet per mile to the north-northwest toward the north border of MLAAP and the Rutherford Fork of the Obion River.

Groundwater flow velocity is a key factor in influencing contamination distribution in an aquifer. The flow velocity is a function of the hydraulic gradient and the hydraulic conductivity of the aquifer, expressed in the equation:

$$V = Ki/n$$

Where:

V is the flow velocity,
K is the hydraulic conductivity,
i is the hydraulic gradient, and
n is the porosity of the sediment.

The values of hydraulic gradient and porosity can be assumed with relatively high confidence, thus the uncertainty in the groundwater velocity is primarily dependent on the hydraulic conductivity. The hydraulic conductivity, which is a measure of the aquifer's ability to transmit water, can be expected to vary considerably throughout the aquifer due to the complex interbedding of sands, silts, and clays of the Claiborne and Wilcox Groups strata.

Based on the hydraulic parameters for the aquifer at MLAAP, an average groundwater flow velocity of 0.14 feet per day was calculated using a standard porosity value of 30% for silty sands, an average gradient of 0.0015, and an average K value of 27 feet per day. This value for velocity represents an estimated average velocity for the MLAAP, and that some variation is expected at localized areas.

Description of Soil Types and Depth Range of Each Soil

Section B provides detailed information regarding the soils beneath the WMA at the MLAAP.

Topography of the Unit Area

Section B provides detailed information regarding the topography beneath the WMA at the MLAAP.

Description of Present Groundwater Contamination Plumes

Based on years of groundwater sampling and analysis conducted at MLAAP, the COCs are nitrobenzenes (explosives). The primary COC constituents are RDX, TNT, and 135TNB, and secondary constituents of HMX, DNB, 24DNT, 26DNT, and tetra. The concentrations of Nitrobenzenes at the OB/OD Units exceed the current cleanup levels set by the USEPA for MLAAP's Sitewide groundwater CERCLA remediation program.

Figures C-1 and C-2 are groundwater plume maps for TNT and RDX proximal to the WMA. Total nitrobenzenes constituents detected in the six monitoring wells in and around the WMA between 2000 and 2020 are summarized in Table C-4.

Table C-4
Contaminants of Concern (Nitrobenzenes) (mg/L)
Waste Management Area — Milan Army Ammunition Plant

Year	MI019*	MI250	MI252	MI259	MI263	MI296
2000	----	1.6093	0.1308	0.6806	0.0098	0.1389
2005	----	2.121	0.156	0.774	0.0208	0.1016
2010-1	ND	2.0740	0.1250	0.5600	ND	0.1280
2010-2	ND	1.954	0.1550	0.5470	ND	0.1260
2015-SP	0.000477 P	1.2133	0.07535	0.7073	0.00092	0.3054
2015-FA	0.000278	1.008	0.06359	0.6365	0.00131	0.3478
2020-SP	ND	0.840	0.04629	0.2286	0.00073	0.1283
2020-FA	ND	1.049	0.09958	0.2137	0.00058	0.1704

Notes:

*MI019 was out of service during the time of monitoring, and has been replaced by MI019b in 2008.

ND - Not detected above the laboratory detection limit.

P - The %RPD between the primary and confirmation column/detector is >40%.

C-10(b) Proposed Groundwater Monitoring Program

A Sampling and Analysis Plan based on MLAAP's most recently approved plan is in Appendix C-4. The Plan provides detailed information regarding well design and location, sampling procedures, analytical procedures, field measurements, groundwater surface elevations, and data evaluation and reporting procedures. The Sampling and Analysis Plan does not discuss vadose zone monitoring or statistical analysis; therefore, the following sections are provided to meet the requirements of the Part B Permit Application.

Vadose Zone Monitoring

Vadose zone monitoring was conducted in 1991 for the entire MLAAP, including the areas around the OB/OD Units. Monitoring indicated contamination in the unsaturated zone over a large portion of the MLAAP, particularly at the OB Unit, including areas both up- and downgradient. That monitoring also

indicated that COCs in the vadose zone were typically nitrobodyes, specifically the explosives 2,4,6-TNT, RDX, Tetryl, and three compounds associated with TNT as 2,4-DNT, 2,6-DNT and 1,3,5-TNB. The facility-wide RI did not indicate the presence of VOCs and was further supported by the use of field instrument for VOC monitoring during the RI conducted at the OB/OD units.

The presence of nitrobodyes (explosives) contamination through the vadose zone and in the saturated zone was confirmed upgradient and downgradient of the OB Unit. Vadose zone monitoring has been ongoing at the OB Unit, at locations both upgradient and downgradient. This monitoring is being conducted by the U.S. Army Corps of Engineers and is currently contracted to a third party. According to the "Final Feasibility Study for Operable Unit 5, Southern Study Area, Milan Army Ammunition Plant, June 2001," monitoring of the lysimeters installed at the OB Unit at six locations (three upgradient and three downgradient) indicated soil moisture contamination within the vadose zone at the OB Unit is extensive. Dissolved RDX and TNT in soil moisture were detected as high as 8,400 micrograms per liter ($\mu\text{g/L}$) RDX and 10,000 $\mu\text{g/L}$ TNT. The study states that the data reflects multiple discreet sources of contamination within the OB Unit; these sources include unexploded ordnance (UXO), ordnance debris, disposal trenches, and runoff of surface water and sediment. The study mentioned that the erosion and redeposition of impacted surface soil has created secondary sources for the infiltration of nitrobodyes into groundwater.

Vadose zone monitoring at the OD Unit was conducted during the 1994 RI for the Southern Study Area, Operable Unit (OU) 5. There is no continuing vadose zone monitoring associated with the OD Unit, as monitoring of the unsaturated zone at or near the shooting pits is not possible due to the type of treatment conducted, which would result in continued damage or complete loss of monitoring stations.

Statistical Analysis

Two statistical methods will be used to evaluate spatial differences and temporal changes between downgradient wells and upgradient wells. Separate analyses will be performed for the two main nitrobodyes constituents at the site, RDX and TNT.

Spatial Analyses

To characterize the differences between downgradient and upgradient wells, a one-tailed analysis of variance (ANOVA) test (USEPA, 1989, 1992) will be used for the most recent four sampling events. The test will examine well-to-well variations ("between-well") with respect to time-related variations common to the wells (within wells). The between-well variance is obtained by calculating the sum of the squares of the each well mean, then normalizing by the degrees of freedom (related to the number of wells). The among-well variance sums the squares of each individual measurement, normalizing by the degrees of freedom (related to the number of observations). The ratio of these two calculations gives the calculated F-statistic, which is then compared to a theoretical F-statistic. The latter serves as a threshold value at a confidence level of $\alpha=0.05$ (95%). If the calculated F-statistic exceeds this threshold, it is concluded that a statistically significant difference exists between the wells. If so, Bonferroni's method will determine which individual wells differ from the upgradient well group.

Before ANOVA calculations are performed, the data will be tested for non-detects, normality, and seasonality. Based upon these tests, the statistical procedure will be modified in compliance with USEPA guidance (USEPA, 1989, 1992). Specifically, if non-detects are less than 15% of the sample group, the non-detects will be replaced by half the practical quantitation limit (PQL); if the percentage is more than 15%, the Wilcoxon Rank-Sum test will be used (USEPA, 1992). If the data are non-normal, they shall be log transformed; if the transformed data are non-normal, a nonparametric ANOVA calculation will be performed. If trends are evident, no ANOVA calculation will be performed.

Temporal analyses

Because both upgradient and downgradient wells are impacted by past activities in this area, ANOVA is better suited to monitor current spatial patterns than to distinguish any potential impact of present OD unit operations from unrelated impacts of the past. To test impact, a temporal trend analysis will compare the rate of change (slope) in RDX and TNT concentrations for downgradient wells with respect to the rate of change in upgradient wells. If the slope of a downgradient well exceeds the slope of upgradient wells, a potential impact of OD unit operations on groundwater will be inferred and TDEC will be notified.

Sen's nonparametric estimator of slope (Gilbert, 1987) has four advantages over parametric and other nonparametric tests for slope: it greatly suppresses noise from outliers and data variability; it makes no assumptions about data distribution; it accommodates missing and non-detect data; and it provides a numerical slope value with confidence interval. Thus, Sen's method can be used to

compare the slope of data at one well to that at another, providing an indicator capable of discriminating between a true onsite impact from offsite influences or changes.

For each well, a two-sided confidence interval will be constructed about the true slope using a confidence coefficient of $\alpha=0.10$ and the eight most recent sampling events, analyzing RDX and TNT separately. Upgradient-downgradient comparisons will be done in two spatial groups:

- Downgradient wells MI263, MI250, and MI252 to upgradient MI259.
- Downgradient well MI296 to upgradient well MI019b.

If the lower confidence limit of the estimated slope at any downgradient well exceeds the upper confidence limit of the estimated slope at its corresponding background well, a potential groundwater impact from current OD unit practices will be inferred and reported to TDEC. Relevant data such as changes with respect to the baseline ANOVA (calculated immediately following issuance of this permit), trend graphs, etc., will be used to qualify this determination.

References for the Statistical Analysis

The following were referenced for statistical analysis guidance.

- Gilbert, Richard O., 1987, *Statistical Methods for Environmental Pollution Monitoring*. New York: Van Nostrand Reinhold.
- USEPA, 1989, *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities — Interim Final Guidance*. USEPA document PB89-151047, Washington, D.C.
- USEPA, 1992, *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities — Addendum to Interim Final Guidance*. USEPA, Washington, D.C.

Detection Monitoring Program

Development of a detection monitoring program for the WMA at MLAAP is complicated due to the past processes conducted at the OB Unit (military munitions testing and treatment since the mid to late 1940s). For the first 12 years, the soil, sediment, and groundwater in the WMA has been tested and analyzed to determine the extent of the contamination resulting from previous activities. MLAAP has determined that the WMA should remain in the detection monitoring program since sampling results have shown the following characteristics: contaminants (i.e., TNT, RDX, TNB, etc.), in downgradient groundwater are the same contaminants found in upgradient groundwater; most of

the contaminant concentrations in site upgradient groundwater exceed those in downgradient groundwater; and CERCLA, as directed by the interagency agreement is still conducting studies and investigations at the site to determine sources of contamination, fate and transport mechanisms, and possible remediation scenarios.

A typical groundwater monitoring program will serve to compare groundwater from locations downgradient of the regulated units with unaffected upgradient groundwater. However, due to the past activities in and around this area, upgradient groundwater on site has been impacted by past processes and is currently being investigated. Therefore, the only practical application of the detection monitoring program is to determine if the OB/OD units have or are contributing to groundwater contamination going forward using the 2007 sampling event as the baseline for determining background concentration values.

The groundwater monitoring program will consist of semi-annual sampling events and include the following monitoring wells: MI259 and MI019b (upgradient), and MI250, MI252, MI263, MI296 (downgradient).

The upgradient wells were chosen for this program because they are set in the uppermost aquifer, their locations are close to the WMA, they have historical groundwater quality data every year dating back to 1995, and they reflect the current upgradient groundwater quality while accounting for groundwater contamination from former operations in and around the area. Monitoring well MI259 was chosen over several other monitoring wells in the area because it has the highest concentration of nitrobenzenes resulting from former treatment operations.

The downgradient (point of compliance) wells were chosen for this program because they are set in the uppermost aquifer, their locations are immediately downgradient from the WMA, they have historical groundwater quality data every year dating back to 1998, and they reflect the current downgradient groundwater quality while accounting for groundwater contamination from former operations in and around the area. Historical contamination is present in the downgradient wells; therefore, as stated above, future groundwater analytical data will likely measure both historical and new groundwater effects due to past and present treatment activities.

Indicator Parameters/Hazardous Constituents

Historical groundwater sampling has been conducted on the site since 1995 and has included the following site indicator and waste constituent parameters.

- pH
- Specific Conductance
- Total Organic Carbon
- Nitrates
- Nitrobodyes (Explosives - HMX, RDX, TNT, TNB, DNT)
- Nitroglycerine
- Diphenylamine
- Metals (Arsenic, Barium, Cadmium, Chromium, Iron, Lead, Mercury, Manganese, Selenium, Silver, Sodium)
- Chloride
- Chlorinated Herbicides
- Fluoride
- Organochlorine Pesticides
- Organophosphorous Pesticides
- Perchlorate
- Phenols
- Sulfate
- Total Organic Halides
- Volatile Organic Compounds
- Coliform

Based on the first 12 years of analytical data, several parameters listed above have consistently resulted in concentrations that are below regulatory standards or were not detected. Therefore, the following indicator parameters and hazardous constituents for the groundwater monitoring program are proposed: nitrobodyes (explosives) HMX, RDX, TNT, TNB, and DNT. For these compounds, the Table C-5 background levels (mean values) were detected in site groundwater.

**Table C-5
Background Values**

	Upgradient		Point of Compliance			
Units = mg/L	MI259	MI019	MI252	MI250	MI263	MI296
Hazardous Constituents						
Nitrobodyes	0.6271	ND	0.1211	1.9422	0.013	0.0102

Note:

Background concentrations represent mean values from the May 2007 sampling event. MI019 was out of order at the time of sampling and is being replaced.

Groundwater Monitoring and Other Considerations

The WMA is within an area that is part of an RI/FS and is likely to undergo some remedial activity. Future groundwater monitoring at the OD unit location that may be affected by these future potential events will be noted in the groundwater monitoring reports. TDEC will be notified of any future activities at the site, such as remediation, for their review and comments prior to implementation.

C-10(c) Groundwater and Subsurface Environmental Protection

As detailed in Section D, trained MLAAP employees follow detailed, intensive clean-up procedures after each detonation in the OD unit to prevent groundwater and subsurface environmental contamination. Refer to Section D of this application for further detail regarding these procedures.

C-11 SURFACE WATER, WETLANDS, AND SOIL SURFACE PROTECTION

C-11(a) OD Unit

Storm water run-on/runoff controls are not necessary for the OD Unit. Earth ejected by the blast during detonation is spread thinly over a large area. Most of the soil is recovered and used to reform the next pit. Surface drainage from the West Shooting Field at the OD Unit is controlled via two engineered silt/sedimentation basins and generally flows to the west along unnamed wet weather conveyance to Wolf Creek. Three 12-inch upright corrugated PVC pipes at the lowest elevation of each silt basin have small holes that prevents the flow of sediment while allowing water to flow through. The pipes carry the water to a creek or ditch. The water then flows to the north into the Rutherford Fork of the Obion River. Runoff from the East Shooting Field is controlled by a silt basin and flows to the east to Halls Branch.

All explosive charge preparation activities associated with OD Unit are conducted on a concrete slab equipped with a metal cover to prevent unexpected precipitation from contacting the material. If inclement weather is possible, all OD Unit activities are secured and any explosive waste is placed under cover to prevent contact with precipitation.

C-12 SOIL SAMPLING

Soil sampling is conducted semi-annually throughout the WMA to demonstrate that soil has not been contaminated by OD unit operation. Soil is analyzed for Total Explosives and RCRA metals. The analytical results are kept on file at MLAAP and are available for review. Recent soil sampling data for the OD units is included in Table C-6. Due to the size of the OD Unit, three soil samples are collected from the East Shooting Field and three from the West Shooting Field.

Table C-6
Most Recent OD Unit Soil Sample Results

Sample ID/Area	Sample Event	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	HMX	RDX	2,6-DNT	2,4,6-TNT	1,3,5-TNB	2,4-DNT	Nitro- glycerine
ADA-1-E (East Field)	Fall 2020	2.87	209	5.32	16.2	59.9	0.113	<2.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0
ADA-2-E (East Field)	Fall 2020	3.10	72.8	4.11	14.5	53.9	0.1150	<2.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0
ADA-3-E (East Field)	Fall 2020	2.81	77.1	4.20	17.2	59.1	0.114	<2.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0
ADA-3-E QC (East Field)	Fall 2020	3.44	78.4	3.78	14.5	47.8	0.1030	<2.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0
ADA-1-W (West Field)	Spring 2022	390	62.0	6.60	12.0	730.0	0.0310*	0.61 (J)	2.1	0.066 (J)	<0.2	<0.2	<0.2	<0.2	<0.2	<1.2
ADA-2-W (West Field)	Spring 2022	3.40	64	3.80	22.0	20.0	0.0283*	0.43 (J)	<0.46	0.061 (J)	<0.2	<0.2	<0.2	<0.2	<0.2	<1.2
ADA-3-W (West Field)	Spring 2022	3.30	66	4.70	23.0	21	0.0299*	0.55 (J)	<0.41	0.060 (J)	<0.2	<0.2	<0.2	<0.2	<0.2	<1.2

*Sample results from Fall 2021
(J) Estimated value

SECTION D

PROCESS UNITS

The information provided in this section is submitted in accordance with the requirements of 40 Code of Federal Regulations (CFR) 270.23, 270.32, 264.601, and 265.382, for miscellaneous units, and Tennessee Hazardous Waste Management Regulations 0400-12-01-.06 and 0400-12-01-.07.

D-1 REQUIRED CONDITIONS PRIOR TO TREATMENT IN A UNIT

Allowable Quantity of Waste per Unit per Treatment Event

Open Detonation Unit

The only hazardous wastes to be treated at the OD unit are hazardous wastes generated through closure activities. Subsurface detonation historically was limited to a prepackaged total explosive weight of 350 to 500 pounds net explosive weight (NEW) or less per pit, with a typical added donor charge of 50 to 325 pounds of high explosives to ensure total treatment. Milan Army Ammunition Plant (MLAAP) has a total of 20 pits at any one time within the OD Unit.

Aboveground detonation is only performed on materials believed to be armed or which have been dropped and are not considered safe to handle. Aboveground detonation is only conducted on an emergency basis and is limited to six shots per day with a maximum amount of 15 pounds NEW for both the munition item and the donor charge.

Operating Time Frame

OD Unit

The typical subsurface open detonation process requires placing a configured pallet of explosive waste (shot) in a pit, covering the shot with 4 to 15 feet of soil, connecting the firing leads to the explosive train, clearing the area, checking the weather conditions, and notifying safety personnel before detonating the shot. The waste typically remains in the pit for two to four hours. The waste explosives are in containers (such as shell bodies) and cardboard boxes with plastic liners, etc., and are under observation at all times.

If, during subsurface open detonation, an explosive train fails to fire, there is a minimum 30 minute wait before thermal treatment personnel may approach the pit. In case of misfires, the waste may be in the pit for up to 8 hours or longer, depending on safety measures taken to ensure proper treatment and to protect site workers. During those situations, the pit is under observation and/or security. Open detonation shots are typically set in the morning hours to allow time for corrective action and treatment of misfires before darkness.

Subsurface treatment of military munitions at the OD Unit is as fast as the explosion will propagate. Typically, subsurface detonation does not produce a visible fireball. In a few cases, a small brief flash is noted at the mouth of the covered treatment pit. Typically, soil — as dust and clouds — is visible in the air during the treatment. Larger soil particles return to the shooting fields almost immediately, while fine soil particles may remain airborne for five to 10 minutes. Aboveground detonation of potentially armed/dangerous rounds (number of rounds must be approved by the Commanding Officer) with a maximum NEW of 15 pounds per shot are also treated at the rate of explosive propagation. This is due to the initiator (typically RDX and/or TNT) used to treat the rounds. In aboveground treatment, an instantaneous fireball is noted as a flash of light.

After detonation, the area may be re-entered immediately to allow policing of waste material and debris. Area access is restricted for 30 minutes in the case of a misfire or a low-order explosion.

Determine the Order of the Blast

The order of the blast is categorized into high or low order based upon the speed of the shock wave. Currently, all onsite blasts are classified as high order.

D-1(a) Meteorological Conditions

Due to the inherent nature of the OD unit, specific meteorological conditions are needed for disposal operations (stated in the Standard Operating Procedures [SOPs]). The OD unit will not be operated under adverse meteorological conditions:

The meteorological conditions under which thermal treatment conducted in the OD unit is permitted at MLAAP are outlined below.

Open Detonation Weather Requirements

Weather forecasts will be monitored and Site Management will be notified whenever a hazardous weather condition exists or may develop. Demolition operations will NOT take place when any of the following conditions exist:

- Lightning activity within 10 miles.
- Sand, snow, or dust storms of sufficient severity to create static electricity.
- Wind is more than 35 miles per hour (mph).
- Extremely cloudy days, defined as overcast (more than 80% cloud over) with a ceiling less than 2,000 feet

During dry conditions demolition operations may be delayed or suspended when there is a high probability of fire as determined by the UXOQCS/SO and SUXOS.

Fire prevention activities will be utilized if necessary to include:

- Engineering controls
 - Vegetation reduction
1. Provided weather conditions are suitable, Site Management directs the preparation of MEC disposal operations. After shots have been prepared, the Demolition Supervisor obtains the above weather data prior to commencing disposal operations. If, at that time, weather conditions exceed limits set above and in SOPs, operations will not begin.
 2. Meteorological data statistics will be maintained daily in the daily report and include all required information obtained from the previously mentioned procedures.

Air Monitoring Requirements

Section K includes the dispersion modeling analysis and the risk assessment discussion that was included in the 2011 permit application for reference. As the OB unit has closed, MLAAP has also closed its Title V Air Operating Permit. No air monitoring or permitting will be required for OD unit activities.

D-1(b) Noise Consideration

Information concerning noise from the OD Unit was taken from the following comprehensive noise and vibration studies and the 2017 Installation Compatible Use Zone Study, which provides summaries of information regarding general activities in and around the OD Unit.

- Environmental Noise Assessment No. 52-34-0431-86, Milan Army Ammunition Plant, United States Army Environmental Hygiene Agency, July 1986
- Measurements of Air and Ground Shock Disturbance Arising from Demolition Activities at Milan Arsenal, Report No. 5, September 1957
- Milan Army Ammunition Plant Installation Compatible Use Zone Study, Environmental Noise Division, Army Public Health Center, January 2017

The 1957 noise study measured detonation conditions that are not indicative of current operations because the study only recorded air blast data on detonations conducted in pits from 2 to 4 feet below ground level (bgl). Most of the former demolition activities at the OD Unit were at a minimum depth of 10 feet bgl. Now that the OD Unit is no longer conducting regular demolition activities, the only

detonations that may occur during the period of this permit will be to detonate explosives as closure activities are conducted.

Since 1997, only nineteen complaints have been filed regarding noise. Three of the complaints were from the same individual in a single month, with unsubstantiated claims of property damage. Table D-1 summarizes complaints made over the last 28 years:

**Table D-1
Summary of Noise Complaints from 1997-2025**

Date/Time	Complaint Description/Comments
Date: 04/07/97 Time: 10:30 a.m.	Broken window glass
Date: 04/21/97 Time: 11:30 AM	Alleged noise was shaking his building (place of business)
Date: 09/22/97 Time: 11:25 a.m.	Alleged noise was shaking his building (place of business)
Date: 11/20/97 Time: 10:30 a.m.	House shook twice alarmed Mrs. Hughes granddaughter; see message dated 11/29/97
Date: 04/09/98	Shaking House. Mr. Hughes stated that some putty had been shaken from his windows.
Date: 06/29/98 Time: 8:45 a.m.	Shaking House. Mrs. Shirley Cox stated that the house shook. She moved here from Alaska and thought it might be an earthquake. She had no further problems and thanked us for explaining the operation to her.
Date: 01/04/01	Structural Damage — Mrs. Bowlers reported she returned home after a two week absence and discovered structural damage. Contacted MLAAP to see if demolition activities were the cause of problem. Record Check at Burning Ground, ADA, and Test Area indicated no detonation occurred during that time period. Mrs. Bowlers was informed that MLAAP could not be the source of structural damage she observed. She thought it might have been an earthquake (tremor). She was given the University of Memphis information for earthquakes. Invited to call back if she wished.
Date: 08/22/01 Time: 9:00 a.m.	Shaking House. Mr. Danny Hughes — next house back from Gardner. Shook pictures on wall. We explained that two shots out of many were the problem. 40MM Cmpl Cartridges. W/pressed A5. We will cut shot size in half and bury 2 feet deeper (14 feet)
Date 08/26/05 Time: 8:58 a.m.	Causing china to move in cabinets and fall and break.
Date: 08/17/06 Time: 11:45 a.m.	Said noise was too early in the morning.
Date: 10/25/13, Time: 9:26 am	No property damage claimed.
Date: 10/29/13, Time: 10:17 am	Same caller as above on 10/25/13. No property damage claimed.
Date: 11/04/13, Time: 10:24 am	Same caller as above on 10/29/13. Ext: 6087 - Army P.R. Affairs notified. Noise Survey conducted on 11/13/13. No damage claim.
Date: 11/04/13, Time: 10:27 am	Same location as above on 11/04/13. No damage claim. Army P.R Affairs notified
Date: 11/13/13, Time: 9:20 am	Complained about "concussions" felt. No damage claim. Noise survey was conducted on 11/14/13.

**Table D-1
Summary of Noise Complaints from 1997-2025**

Date/Time	Complaint Description/Comments
Date: 11/20/13, Time: 10:27 am	"Felt" 3 or 4 hard jolts that left chandeliers swinging. No damage complaint. Determined to be too far away from MLAAP.
Date: 8/8/16	No description available
Date: 9/20/16	Noise Survey conducted and visit to home conducted on 9/22/16. Complainant reported crack in wall on the morning of 9/20. Noise survey in file
Date: 11/28/17, Time: 9:00 am	Explosions/concussions rattling windows. ACO Environmental responded 11/28/2017 and 11/29/2017. Mr. Mussenden did not hear anything on 11/29/2017. No further action at this time.

D-1(b)(1) Distance of the OD Unit from Offsite Inhabited Buildings

MLAAP used several methods to control noise impacts from former open detonation activities including maintaining a separation distance of approximately 7,500 feet between the OD Unit and the Army's facility boundary. The distance from the nearest private residence or commercial dwelling to the OD Unit is over 1 mile (approximately 7,125 feet) to the east and south. Except for Lavinia, Tennessee, which is immediately east of the MLAAP boundary, the areas east, south, and north of the MLAAP boundaries are thinly populated. The west boundary, which parallels Highway 45E, is more heavily populated, especially along the northwest corner where there are numerous small-populated communities and the City of Milan. Those communities and the City of Milan are between at least 4 to 5 miles from the OD Unit.

D-1(b)(2) Wind Direction

Section B discussed wind direction and presented wind rose diagrams, Figure B-7a and B-7b, which represents meteorological data from the Jackson McKellar Regional Airport. Section K may also provide valuable information.

D-1(b)(3) Airblast

Studies have shown that variations of temperature and wind velocity with altitudes can cause variations in noise levels. This phenomenon is referred to as atmospheric refraction.

Airblast Maximum Levels

Results from the 1957 study indicated that the largest air blast pressure measured at MLAAP was 2.80 pounds per square foot, recorded at a point 3,500 feet south/southeast of the OD Unit. The shots producing that pressure consisted of five 100-pound charges detonated simultaneously. Data also indicated that a peak pressure of greater than 1.0 pound per square foot was exceeded

14 times; 12 at 3,500 feet, once at 16,000 feet, and once at 18,000 to 20,000 feet. None of the pressures recorded was sufficient to have any damaging effect upon typical structures in the area.

Results from 1986 assessment indicated a slight increase in noise levels as shown in Table D-2; however, that study did not report or compare air blast pressures.

Table D-2
1957 and 1986 Noise Levels at MLAAP

1957 Measured dBP⁽¹⁾	1986 Predicted dBP	Distance from OD Unit
122.6	137.4	4,528 feet
114.5	132.8	7,740 feet
125.6	146.5	2,985 feet

Note:

(1) dBP = peak noise level

Using information collected from a computer simulation program (MicroBNOISE), the 1986 assessment generated a set of noise contours shown on Figure D-1 in Appendix D-1. The contours define the outer boundaries of the Installation Compatible Use Zone (ICUZ) II and ICUZ III. The noise limits for each zone are listed in Table D-3.

Table D-3
Noise Limits for ICUZ

Noise Zone	Noise Limits (dB) CDNL
1	< 62 dB
2	62 – 70 dB
3	> 70 dB

Notes:

CDNL = C-weighted day-night levels
dB = Decibel

All areas outside these contours are ICUZ I and are rated as "clearly acceptable" for noise-sensitive land uses. No portion of the annual average noise contours extends beyond MLAAP boundary, indicating that no noise-sensitive receptors will be adversely impacted by noise from open detonation activities at MLAAP.

These zones were confirmed in the 2017 ICUZ Study at MLAAP, conducted by the Army Public Health Center.

Monitoring Airblast Effects at Several Receptors

The 1957 noise study showed that air blast monitoring was conducted using charges that were detonated at 4 feet above ground surface, at ground surface, under 2 feet of dirt cover, under water, and in numerous specially designed barricades. These shots were performed at 24 locations, ranging from 3,000 to 20,000 feet from the OD Unit, to determine the effects of various terrain. During the study, over 260 shots were performed and monitored. At each receptor, various charge sizes were also used to determine the maximum size of a charge that would be allowable at the OD Unit.

The 1986 assessment listed three site locations at distances ranging from 2,985 to 4,528 feet from the OD Unit but did not provide the exact testing location.

Type, Sensitivity, and Capability of Blast-Monitoring Equipment

The comprehensive noise study conducted in 1957 included a thorough investigation using the low frequency FM narrow band system to record sound waves in the range from 2 to 10,000 cycles per second (cps) at pressures as low as 0.01 pound per square foot. The typical FM narrow band system consisted of:

- Altec Lansing Microphone, type 21BR-150
- 24-megacycle FM Oscillator
- FM narrow band microphone amplifier and discriminator
- Recorder with amplifier
- Portable power supply as required

The assessment conducted in 1986 incorporated the use of computer simulation (MicroBNOISE). The MicroBNOISE program requires operational data concerning the amount and type of ammunition to be treated and utilizing the day-night sound level (DNL) and the equivalent sound level evaluators.

Procedures

The 1957 study used a microphone probe mounted horizontally on a tripod outside a truck and pointed towards the OD Unit for the most satisfactory response. A gauze shield was employed to minimize noise generated by the wind acting upon the microphone. In addition, two microphones were utilized to record each air blast to ensure reliability of the instrument operations. Meteorological data (temperature and wind velocity) was obtained three times daily by airplane at 500-foot intervals to a height of 3,500 feet in order to select recording sites that would experience the maximum amount of air shock return under adverse metrological conditions.

The 1986 assessment was based on a maximum 30,000 pounds per day quantity of explosive material that could be treated, according to the facility's Title V Permit. The annual total was then calculated to be approximately 188 tons, based on records from June 1986 to June 1987. Using that annual total; an assumed work year of 242 days, and the assumption that most of the material will be covered by 8 to 10 feet of dirt; the set of noise contours presented in Figure D-1 was produced by the MicroBNOISE computer model.

Map Showing Monitoring Receptors

Figure D-2 displays the monitoring receptor stations from the 1957 study.

Range of Sizes of Explosives Charges in the Monitoring Data

The 1957 study used charge quantities for each shot ranging from 10 to 400 pounds. Each receptor location measured shots conducted 4 feet above ground surface, at ground surface, under 2 feet of dirt cover, under water, and in numerous specially designed barricades.

The 1986 study used the computer model MicroBNOISE to simulate charges from within the OD Unit ranging from 5.4 kilograms (aboveground) to 226.8 kilograms (subsurface). The exact aboveground heights and subsurface depths were not mentioned in the study.

Atmospheric Conditions during the Monitoring

Since air blast levels are also influenced and/or dependent upon meteorological conditions, especially inversions, weather conditions during the studies were crucial to achieving typical operating conditions at the OD Unit.

The 1957 study took meteorological readings three times a day at various height intervals up to 3,500 feet. The meteorological data collected was used to explain the inconsistencies in the air blast data collected at the varying distances from the OD Unit. For example, several readings showed unusually large pressures at greater distances. After review of the meteorological data at the time of the test, a conclusion was made that sound speed inversions were occurring causing the data to produce abnormal results. As a result of this study, a list of weather conditions were determined to produce the least amount of air blast pressures and noise; all of which are researched and documented prior to each demolition per Section D-1(a).

The 1986 assessment does not list the atmospheric conditions used by the computer simulation model.

D-1(b)(4) Ground Vibrations

Information concerning ground vibrations was taken from the 1957 study.

During the onsite testing for air blast outlined in Section D-1(b), Ground Shock Disturbances were also monitored and measured. Those measurements were taken using velocity-type low-frequency seismometers capable of measuring ground vibrations of displacement as low as 0.0000001 inch, i.e., the order of 1 million times lower than the lowest levels that might possibly cause any damage. The equipment used was a Houston Technical Laboratories S-36 seismometer with a natural frequency of 2 cps and a Southwest Industries Electronics S-16 geophone with a natural frequency of 18 cps. The largest direct ground vibration was recorded from shot No. 16 (5-100 lbs) at Site No. 1B (3,500 feet). This particular recording for the subsurface direct ground wave was an acceleration index of 4,000, which is 1/25 of the caution zone value. Even within the 3,000-foot radius (MLAAP property), no ground shock recordings were in excess of the caution zone value of 0.1 regardless of the quantity of explosive detonated during the test.

Based on the studies outlined above, the minimum protective distance to others from the OD Unit would be less than 3,500 feet. All property within this radius from the OD Unit belongs to MLAAP; therefore, no property of others would be impacted by activities at the OD Unit.

D-1(b)(5) Manner of Placing the Waste in the Unit OD Unit

A hole will be dug to place consolidated shots and soil will subsequently be placed on top, covering the waste. This is referred to as buried explosive module (BEM). Temporary BEMs will be utilized in the footprint of former detonation activities and may be used as needed. The depth of the hole is calculated based on the munition or the net explosive weight (NEW) of the consolidated items. See SOP G-21 for more details.

D-1(b)(6) Minimum Protective Distances

Table D-4 lists minimum safety distances for open burning waste organic explosives. These distances were taken from 40 CFR 265.382.

Table D-4
Minimum Safety Distances For OB/OD Unit Operations

Quantity of Waste Explosives or Propellants	Minimum Distance From Unit
0 to 100 pounds	204 meters (670 feet)
101 to 1,000 pounds	380 meters (1,250 feet)
1,001 to 10,000 pounds	530 meters (1,730 feet)
10,001 to 30,000 pounds	690 meters (2,260 feet)

D-2 OPEN BURNING IN CONTAINMENT DEVICES WHERE UNIT INCORPORATES SOIL AS PART OF THE UNIT

Open burning is no longer conducted at MLAAP; therefore, this section is not applicable.

D-3 OPEN BURNING ON THE GROUND SURFACE WHERE UNIT INCORPORATES THE SOIL AS PART OF THE UNIT

MLAAP does not conduct open burning on the ground surface; therefore, this section is not applicable.

D-4 OPEN DETONATION

D-4(a) Appropriateness of Treatment Technology

Based on the quantity and expected nature of the items, OB/OD using In-Grid Consolidated Shots with DoD and USACE approved mitigation techniques is recommended as the preferred treatment alternative to treat/dispose of MEC encountered during closure activities.

In-Grid Consolidated Shots have been conducted safely and successfully using the U.S. Army Engineering & Support Center, Huntsville (CEHNC) publication, "Procedures for Demolition of Multiple Rounds (Consolidated Shots) on Ordnance and Explosives (OE) Sites", to properly conduct such explosive demolition operations. The Department of Defense (DoD) Explosives Safety Board (DDESB) approved Explosives Safety Submission (ESS) parameters for allowable Net Explosive Weight (NEW) and required safety quantity-distance (QD) arcs will be implemented and used for safety of personnel and property. Analytical results of post-detonation soil samples for explosives have all been proven OB/OD activities on this scale do not adversely affect human health or the environment. ESS approved mitigation techniques can also be implemented when necessary. The mitigation techniques approved for the ADA in the DDESB approved ESS are: (1) sandbag mitigation used when effective during blow-in-place (BIP) operations when the MEC item is certified unacceptable-to-move; (2) water mitigation when fire hazards are high at the site to reduce fire hazards; and (3) Buried Explosion Module (BEM) [tamping] used instead of open detonation at the surface, acceptable-to-move items are consolidated and tamped/buried, utilizing the BEM to calculate and reduce the fragmentation distance when circumstances exist that require such reduction of the hazardous fragmentation

distance (e.g., operational building, evacuation of personnel not feasible, main thoroughfare with high traffic volume, etc.).

- **Safety:** Items are controlled using the set safety parameters of the DDESB approved ESS, project approved plans, USACE mitigation technique pamphlets, and standard operating procedures.
- **Availability:** All materials and equipment are already in place.
- **Feasibility:** Explosives are expected to be consumed, with no residual amounts in soil above screening levels and no additional waste streams.
- **Recommendation:** The proposed treatment method is recommended. By comparison, all other technologies require additional safety protocols, generate new waste streams, take significantly more time (e.g., permits), involve shipping of items, and/or require additional quality control measures.

D-4(b) Description of OD Unit

Physical Characteristics, Construction Materials, and Dimensions of the Units

Site Management will ensure that coordination through CEHNC and MLAAP POC(s) is completed, and all pertinent parties have been notified of the on-site demolition schedule and evacuated per the minimum separation distance (MSD) distance from the Explosive Safety Submission (ESS). Scheduled demolition operations will be coordinated with all stakeholders to limit conflict with MLAAP operations. Explosive operations will be conducted IAW the procedures outlined in USACE EM 385-1-97, Change 1, the approved project UFP-QAPP work planning documents, and the project Standard Operating Procedures (SOP)s.

Open detonation will be conducted in both aboveground and subsurface pits. The materials treated are large caliber military ammunition and other explosive military munitions that may contain some explosive hazard after previous treatment at the OD Unit. The OD Unit is an approximately 40-acre area with two adjacent shooting fields.

The excavations will be entirely natural earth (native soils), consisting of enough silt and clay to act as binders that provide a stable configuration. The soil also contains enough sandy material to ensure effective cover and reduce blast noise during treatment.

Depth to bedrock averages greater than 600 feet, and depth to groundwater is 80 to 100 feet bgl, based on static groundwater elevations in monitoring wells at the WMA (discussed in Sections B and C).

The wastes to be treated are typically shell bodies of munitions constructed of steel. The munitions may also contain metals such as aluminum, brass, and copper, and other materials including paper, plastic, and rubber.

The quantity of explosive waste to be treated at the OD Unit depends upon the type and configuration of the military munitions that are encountered and must be removed to safely complete closure activities. Typical subsurface detonation will be limited to a total explosive weight of 350 to 500 pounds or less (as NEW) per event. A maximum 10,000 pounds (as NEW) of waste military munitions will be allowed to be treated daily. Depending on weather conditions, this process will be allowed to be conducted year-round.

Aboveground thermal treatment will be conducted at the OD Unit to treat munitions that are too dangerous to manage via normal subsurface treatment. NEW for aboveground open detonation will be limited to 15 pounds for both the munition item and the donor charge. No special soil will be laid out or other changes made. After treatment, personnel will monitor the site to ensure treatment was complete and the area is safe for operation. The reason this activity is conducted aboveground is for the safety of demolition personnel. Damaged or potentially armed munitions cannot be added to a subsurface shot, as they may detonate before the shot is placed in the pit, setting off a large explosion, potentially with personnel and equipment in the area. If placed in the pit, the damaged round may not function and be blown out of the pit to an unknown location, where it may function later, resulting in injury/damage to personnel and/or equipment. The aboveground process on 15 pounds NEW will be conducted no more than 6 times a day, unless approved by MLAAP.

The amount of waste military munitions and the configuration for aboveground treatment will be limited to a maximum total explosive weight of 15 pounds (except during an emergency that may threaten human health and/or the environment).

Ancillary equipment associated with the OD Unit consists of an earthen-covered, steel-reinforced concrete structure (Shooting Barricade W-53) used as a firing control/observation post, and material storage area. Various earth-moving equipment, likely a robotically operated bulldozer, excavator, and skid steer, will also be used at the site.

D-4(c) Engineering Drawings of the OD Unit

See Figures B-4, B-7a and B-7b in for details on the locations of the OD Unit detonation pits.

D-4(d) Inspection, Monitoring, and Maintenance Plan

All demolition process operations at the OD Unit are inspected before, during, and after each use. Daily safety and quality control inspections are completed to ensure suitability for continued operations. Those inspections also include the associated communication equipment, which is essential to OD Unit operations. The inspections are logged on a form maintained by the Site Management and kept in office space used by contractor operating this permit. Copies of these inspection forms will be given to Army Environmental.

During operation (establishment of any engineering controls, configuration of shot, placing of shot in firing position, preparation of firing, actual firing, and post-detonation inspections) the process is monitored. The Demolition Supervisor reports any abnormalities and/or problems to the Site Management. Inspections and monitoring that reveal any requirements (outside minor adjustments) are reported immediately to Site Management. All SOPs for permitted activities at MLAAP will be followed to include OD equipment inspections and maintenance.

D-4(e) Ash and Residue Management

Thermal treatment conducted at the OD Unit generates little ash, debris, and residue due to the high pressures and heat produced. The ash, debris, and residue that is produced is completely mixed with site soil during treatment so the only distinguishable material produced is metal fragments. The metal fragments are periodically policed and disposed of or recycled appropriately. Open detonation procedures require that the visible fragments be collected following a detonation event in order to reduce the amount of debris and potential residue remaining in the soil.

The nature of open detonation results in some potential for soil contamination. The materials detonated are highly reactive, and explosion results in very nearly complete treatment (combustion). The residues remaining tend to be present in soil in very low concentrations minimizing any impacts.

D-4(f) Run-On and Run-Off Management

Storm water run-on/run-off controls are limited for the OD Unit due to the nature of the operations in that area. Earth ejected by the blast during detonation is spread thinly over a large area; most of the soil is recovered and used to reform the next pit. To prevent run-on from entering the shooting pits, the mouth of the pit is higher than the surrounding soil. Additionally, the recovered soil is mounded around the pit to a height of over 50 inches, which also prevents storm water from running into the pits. The shooting pits are placed close to the top of a gentle slope to reduce the amount of run-on/run-off generated near the pits. There are three silt basins at the OD Unit to capture all run-off and allow the silt to settle before releasing the storm water.

D-4(g) Copy of SOPs

SOPs for open detonation are in Appendix D-2. The SOPs are reviewed and updated periodically to allow the facility to be current with changing environmental regulations and technology.

D-5 GEOLOGIC REPOSITORIES

MLAAP does not have a geologic repository; therefore, this section is not applicable.

D-6 DEACTIVATED MISSILE SILOS

MLAAP does not have deactivated missile silos; therefore, this section is not applicable.

D-7 CERTAIN THERMAL TREATMENT UNITS OTHER THAN INCINERATORS

MLAAP does not have any of the thermal treatment units listed in 56FR720002; therefore, this section is not applicable.

D-8 CERTAIN CHEMICAL, PHYSICAL, AND BIOLOGICAL TREATMENT UNITS

MLAAP does not have chemical, physical, or biological treatment units; therefore, this section is not applicable.

D-9 TREATMENT OF BUILDINGS WITH EXPLOSIVES CONTAMINATION

MLAAP does not treat buildings with explosive contamination; therefore, this section is not applicable.

D-10 TREATMENT OF WASTE IN AN ENCLOSED CONTAINMENT

MLAAP does not treat waste in an enclosed containment; therefore, this section is not applicable.

SECTION E

PROCEDURES TO PREVENT HAZARDS

This section describes the procedures and structures at Milan Army Ammunition Plant (MLAAP) to prevent and minimize the possibility for unauthorized entry of persons or livestock onto the active portion of the facility, and to prevent and/or mitigate hazards associated with the miscellaneous thermal treatment of hazardous wastes. The information is submitted in accordance with 40 CFR 270.14, 40 CFR 264.14, 40 CFR 264.32-264.37, and the Tennessee Hazardous Waste Management Regulations 0400-12-01-.06 and 0400-12-01-.07. The section includes general security procedures, preventive procedures, and procedures for the management of ignitable, reactive, and incompatible wastes.

E-1 SECURITY

The entire MLAAP is a secured, limited-access facility. The perimeter of MLAAP is protected by a five-strand barbed wire fence. All gates to the portion of the plant located north and south of Tennessee Highway 104 and east of Highway 45E are locked. All outside hazardous waste transport vehicles must be escorted while on the MLAAP facility. Procedures for providing access to outside vehicles are in the Security Department's "Security Policies and Procedures". MLAAP Security Department personnel also provide roving patrols of the facility, including Highway 104.

E-1(a) Security Procedures and Equipment

Specific security procedures and equipment for the open detonation (OD) unit are described in detail in Standard Operating Procedures (SOPs) to which the Security Department onsite adheres.

E-1(a)(1) Surveillance System

The MLAAP is protected by a surveillance system that is designed and operated to prevent unauthorized entry or access to MLAAP property. This system includes identification badges for all employees, visitors, contractors, and tenants. All personnel entering MLAAP must pass through security check points. At the checkpoints, security may perform a search of personnel and personal belongings, including vehicles being brought onto the MLAAP. Use of personal vehicles within the OD unit is discouraged.

Gates that are not manned remain locked and are checked by roving security patrols. Keys to gates, buildings, and other structures, which must be signed in and out through MLAAP Security Department, provide access to only those areas in which the person must have access. All keys must be turned in at the end of shift if the Security Department has not been notified that the keys are required by an employee for any extended period. Loss of a key requires

a change of the entire series of lock and the responsible party may be subject to a fine. All keys and locks at the MLAAP are audited by the Chief of Protective Services.

E-1(a)(2) Barrier and Means To Control Entry

The entire MLAAP facility is fenced with five strands of barbed wire to restrict unauthorized entry onto plant property. All points of entry into the facility are secured during operating and non-operating hours. A security patrol checks all points on a scheduled basis and provides a roving patrol over the entire facility, including the OD unit. In addition, entrance gates to the OD unit are locked during non-operating hours.

Gates allowing entry onto the MLAAP facility from State Highway 104 are steel crash gates, designed to prevent unauthorized entry by vehicles. The gates have warning signs displaying that the facility is U.S. Government Property and only properly authorized personnel are allowed to enter. All other entry gates to MLAAP are 6-foot-high chain link fencing. As the OD unit is over one mile from any entry gate to MLAAP, and as all internal roads are patrolled by armed security forces, there is low probability of unauthorized access.

In addition to the MLAAP's perimeter fences, gates, and armed security patrols, the OD unit is surrounded by a 6-foot chain link fence with triple stands of barbed wire mounted along the top. The fencing has warning signs spaced at 500-foot intervals. This fencing prevents unknowing entry into the OD unit.

Within the OD unit, barricades and/or personnel acting as observers are used to prevent and/or direct non-process personnel entry to the area during operations.

At the OD Unit, visiting personnel must sign in and check with Site Management before proceeding inside the ADA fence. During many activities at the OD Unit, casual personnel are not allowed within the fence. Exclusion zones will be in place during any explosive operations.

Safety personnel visit the OD site daily to record and observe all operations. All gates, buildings, and/or processes at the OD unit are locked unless attended by operating or security personnel.

E-1(a)(3) Warning Signs

Existing signs reading "U.S. ARMY RESTRICTED AREA WARNING" are located at the gates accessing the OD unit and intermittently around the outer perimeter fence. The fence located around the perimeter of the OD unit has signs spaced at 500-foot intervals that read "DANGER-EXPLOSIVE DISPOSAL AREA-KEEP OUT." The chain link fence surrounding the active portion of the

treatment unit have signs at each gate and at 50-foot intervals that read "DANGER — Unauthorized Personnel Keep Out." In addition, signs with the legend "NO SMOKING — NO MATCHES — NO FLAME PRODUCERS WITHOUT PERMIT BEYOND THIS POINT" are posted at the access gates.

Other warning signs include: "Hazardous Waste, Authorized Personnel Only" on buildings that contain hazardous waste; "Do Not Proceed" barricades or crash gates on roads leading to specific processes within the Waste Management Area (WMA); safety warning signs such as "Explosive Limits," "Limits to Operator and Casual Personnel" at the process, and type of personal protective equipment (PPE) required (e.g., "Safety Glasses with Side Shields Required in this Area").

All signs displayed at the OD unit are in English, are legible from a distance of greater than 25 feet, and have minimum 2-inch lettering, typically black or red on contrasting backgrounds. Warning signs posted at the entry points to MLAAP are also reflective to facilitate reading at night.

E-1(a)(4) Homeland Security Issues

The OD unit is on an active government owned, contractor operated military installation with strict access and other security procedures. All MLAAP personnel are required to visibly display identification badges while on the installation and are forbidden from wearing their badges when they are off the installation. Visitors who are allowed access to the MLAAP must have photo identification, are subject to a vehicle search upon entry, and must declare which specific areas/personnel are to be visited. Any visitor traveling beyond the headquarters building must be escorted by vetted MLAAP personnel. Visitors must wear a visitor's badge at all times while on the installation and return them upon leaving the installation. Visitors are prohibited from bringing cameras and computers on the installation without permission from MLAAP.

E-2 PREPAREDNESS PREVENTION DOCUMENTATION

The OD unit is designed, constructed, maintained, and operated to minimize the possibility of an unplanned fire, explosion, or sudden or non-sudden release of hazardous waste or hazardous waste constituents to the air, soil, or surface water which could threaten human health or the environment. During thermal treatment operations, personnel are never allowed to work alone at the units. A supervisor is required to be at the OD unit before operations are allowed to be conducted.

E-2(a) Required Equipment

Equipment requirements are described in current SOPs for the OD unit, and in the current MLAAP Spill Prevention and Response Plan. Section F of this application describes inspection schedules and includes tables listing communication and alarm systems, decontamination equipment, maintenance and transportation vehicles and equipment, and PPE available at the OD unit.

E-2(a)(1) Internal Communications

Employees involved in hazardous waste operations at the OD unit are in close proximity to communication systems and/or in visual and/or voice contact with other employees who may summon assistance.

Telephones

Having telephones at the pits or shooting fields is impractical because the thermal treatment of waste munitions would destroy a telephone system (due to the heat, pressure, and debris generated).

Cell phones and/or two-way radios will be available for site and emergency communications (project office, Project Manager [PM], SUXOS, UXOSO, and field staff).

Internal emergency assistance can also be obtained by dialing "731-686-6565" to notify the security and report the emergency. Security will notify the appropriate emergency response personnel.

Alarms and Warning Devices

The OD unit are not equipped with fire alarms or warning devices, but equipment spotters will be provided with emergency air horns to alert all personnel to stop work immediately. All field personnel will be trained regarding site emergency signals. In the event of an emergency, rally points will be discussed and determined during each morning brief. If a pre-determined rally point was not designated, personnel will assemble at the OD shooting barricade or site trailer in case of an unplanned fire, explosion, or release.

Personnel are trained to evacuate the area during an emergency and summon emergency assistance from the MLAAP security department. The OD unit is limited as to the amount of waste munitions and personnel allowed, and the pits are spaced to prevent a fire or explosion from propagating from one to another.

E-2(a)(2) External Communications

MLAAP Security will handle all external communications for emergency response, as needed.

E-2(a)(3) Emergency Equipment

Emergency equipment is not stored at the individual treatment units as exposure to treatment conditions (heat, flame, and explosions) would damage the equipment during each treatment.

Available emergency response equipment available for the OD unit is listed in Table E-1.

**Table E-1
Emergency Equipment List
MLAAP ADA**

Equipment	Quantity	Location
Fire hydrant	≤1	Route 23
Absorbent and pigs	Case(s)	Buildings W-5, W-61A, W-60, and EWTF
Brooms and shovels	Varies	Office Trailer By ADA
Cell Phone	Varies	With Site Management
Two-way radio	Varies	With Site Management
First Aid Kit	Many (all vehicles)	All Support Vehicles
BBP Kit	Many (all vehicles)	All Support Vehicles
Eye Wash Kit	Many (all vehicles)	All Support Vehicles
Fire extinguisher	Many (all vehicles)	All Support Vehicles
Earth Moving Equipment	≤2	ADA
Flashlight	Varies	All personnel

E-2(a)(4) Water for Fire Control

Water for fire control is required for open detonation activities. Fire hydrants are located near the ADA along facility route 23. A minimum elevated storage capacity of 500,000 gallons is available at all times for fire control (maximum storage of approximately 750,000 gallons). Onsite groundwater wells are capable of delivering in excess of 2,750 gallons per minute to this system.

The Milan Fire Department is equipped, staffed, and trained to respond to fires and other emergencies involving propellants, explosives and pyrotechnics (PEP) and waste munitions. Emergencies at the OD unit, especially fires, may not always involve the use of water and/or fire fighting. If PEP and/or munitions are known to be in the area of the fire, the responding On-Scene Emergency Coordinator will not enter the unit to respond to the fire. The firefighting efforts will be conducted at the WMA boundary. If PEP and/or munitions are confirmed not to be in the area of the fire, the responding On-Scene Emergency Coordinator will decide if fire control will be conducted within the OD unit.

E-2(a)(5) Testing and Maintenance

All facility communications equipment, emergency response equipment, and fire control equipment are tested and maintained as necessary to ensure proper operation in time of emergency.

Testing of the fire hydrants is conducted under the supervision of MLAAP Maintenance Supervisor. All fire hydrants are tested annually, including those near the WMA. Testing methods consist of flow testing (Tandem Flow) using the Universal Flow Chart.

E-2(a)(6) Arrangements with Emergency Agencies

Coordination agreements with local emergency agencies are discussed in Section G (Contingency Plan) of this application. Assistance from local agencies such as police departments is limited. The arrangement with the local fire department is to respond to any emergency at the MLAAP.

Emergencies or responses at the OD unit are expected to have little or no impact outside the WMA. Because MLAAP is a federal facility, local and State law enforcement have little or no authority. MLAAP's Security Department staff is equipped to handle the types of emergencies expected to occur at the OD unit.

The City of Milan Hospital will be utilized to provide emergency medical services.

E-3 GENERAL HAZARD PREVENTION

MLAAP does not request a waiver of the preparedness and prevention requirements of 40 CFR 264 Subpart C.

E-3(a) Loading and Unloading Operations

Loading and unloading operations of hazardous waste will not be conducted. All hazardous waste to be treated at the OD unit is already within the OD unit. The only loading and unloading operations to be conducted in the OD unit are those regarding unloading/loading of donor explosive charges, which will be done in accordance with the contractor's explosive management plan, as well as loading of scrap metal and other materials that are non-hazardous.

E-3(b) Run-Off Prevention

The WMA is located near the crest of gently rolling hills. The areas are not located near 100-year flood plains, flooding areas, or perennial streams. Both areas are well-drained and naturally contoured to prevent flooding.

The Contingency Plan requires immediate removal of spilled materials to prevent contamination of run-off from handling areas. The MLAAP immediately responds to and cleans up any spills that may occur and enter storm water paths at the OD unit. Run-off is discussed further in Sections B and D.

As discussed in Sections B and D, no treatment of waste munitions is conducted during periods of precipitation or forecasted high probability of precipitation.

MLAAP has only one flowing stream (Johns Creek) inside the facility boundary. For a number of years, ending in 1994, water from Johns Creek was sampled for explosives at the point it crossed Highway 104, downgradient from the point Halls Branch enters the creek. Sampling was terminated as no explosives were ever detected in the creek. Johns Creek flows into the Rutherford Fork of the Obion River. The Rutherford Fork of the Obion River flows along the north boundary of MLAAP and receives drainage from the major active portions (industrial, manufacturing, maintenance, and miscellaneous thermal treatment).

To reduce the potential for run-off, open detonation is not typically conducted during the late fall, winter, or early spring, except during heavy workloads. After any munitions treatment at the OD Unit, the treatment area is inspected and any metal and debris is removed. The OD treatment pits are typically filled during the winter months to prevent accumulation of water.

Since testing and analysis of soils began at the OD Unit in 1994, only one pit has collected storm water that required analysis. If an open pit is left inactive for a long period of time, the pit is prone to capture and hold storm water. Therefore, open pits are mounded around the perimeter to prevent run-on and run-off so that only storm water falling directly into the open pit is captured. If a pit does accumulate water during inactive periods, the accumulated water is analyzed for RCRA metals and nitrobenzenes before the water is removed from the pit. Water that is removed is taken to an offsite TSDF for treatment if determined that it is a hazardous waste or will not meet MLAAP's NPDES permit discharge limits.

No treatment operations are conducted during periods of precipitation, or forecasted high probability of precipitation at the burn pans. The contoured drainage ditches, natural contouring, and the physical construction of the treatment units act to limit run-off by also controlling the run-on. All run-off from the OD Unit is captured by one of three silt basins. The silt basins allow silt from the Shooting Fields during periods of heavy rainfall to settle and not be conveyed offsite. There is no overflow of the pits. Run-off from the East Shooting Field at the OD Unit flows to the east silt basin, then along natural drainage to Halls Branch. Although the drainage path from the OD Unit to Halls Branch is more than 3 miles, the head of Halls Branch is 0.8 mile to the east. Drainage from the OD Unit joins drainage from the OB Unit before entering Halls Branch. All drainage features, up to and including Halls Branch, are wet-weather conveyances.

Drainage from the West Shooting Fields at the OD Unit flows to two silt basins then along natural drainage to the East Fork of Wolf Creek. The East Fork of Wolf Creek joins Wolf Creek then flows to the Rutherford Fork of the Obion River. The East Fork of Wolf Creek is a 20- to 40-foot wide wet weather conveyance ditch. The ditch ranges in depth from 5 to 12 feet, with a sandy bottom and sandy silt banks. The ditch is lined with lowland hardwoods. As with Halls Branch and other large drainage ditches onsite, the drainage has cut through the silty overburden (alluvium) and provides a direct recharge to groundwater.

E-3(c) Mechanisms to Prevent Contamination of Water Supplies

Groundwater flow is to the north, northwest, and in the area of the WMA, is known to be contaminated with explosives (nitrocompounds) from past practices and operations. Analysis of groundwater from three wells located immediately downgradient of the WMA from 1982 to 1993 indicates that the level of explosives in the groundwater increased at a relatively constant rate until approximately 1990. Since 1990, explosives (nitrocompounds) levels appear to have stabilized, and in some cases, decreased slightly. Operational procedures at the OD unit are designed to limit the impact and potential threat to groundwater. A complete study of the current and past groundwater and soil is presented in "Milan Army Ammunition Plant, Final Remedial Investigation Report, Southern Study Area (Operable Unit No. 5)." Addressing groundwater contamination at the OD unit is documented in the Federal Facility Agreement. For more information of the remediation work being done for sitewide groundwater, see Section I.

E-3(c)(1) OD Unit (Ammunition Destruction Area)

Because of the near total destruction of the explosives in contained blasts (i.e., no detectable explosives compounds), neither surface water nor groundwater supplies are known to be affected. It is possible that groundwater supplies could be affected over time due to leaching of

metals from subsurface detonation, which is detailed in Section C. Groundwater is sampled semi-annually from areas at the OD Unit. Soil is sampled semi-annually if detonations occurred since the last semi-annual sample event.

The following steps are carried out at the OD Unit to reduce the threat to both groundwater and soil:

- All spills and leaks that occur are reported to the appropriate department(s) within MLAAP and cleaned up as soon as possible to prevent contaminated run-off and threats to groundwater.
- There is little, if any, open detonation conducted during months of the year with the highest known occurrence of precipitation.
- Most open detonation is conducted subsurface in covered pits, which improves treatment by increasing the heat and pressure during detonation.
- After each shot at the OD Unit, all metal and other debris are collected for proper disposition.
- All hazardous waste awaiting open detonation is kept in enclosed trailers, buildings, storage magazines, or in closed metal/wood containers to exclude windborne spread of contaminants and eliminate the threat of soil and groundwater contamination.
- Open detonation does not take place when there is a high potential for windborne spread of contamination, or when there is precipitation or a high potential for precipitation.
- The OD Unit shooting fields are contoured to eliminate the potential for run-on.
- Run-off from the shooting fields due to precipitation is captured in one of three large silt basins to allow settling of any potential silt from run-off.
- All OD Unit personnel are trained in hazardous waste management and management of waste munitions.

E-3(d) Equipment and Power Failure

No processes at the OD Unit would be affected by a power outage. Process equipment used at the WMA has backup systems or replacement units that can be obtained within 24 hours.

Miscellaneous thermal treatment processes are shut down during inclement weather conditions, high winds, lightning, precipitation, threat of precipitation, and low ceiling heights.

E-3(e) Personal Protection Procedures

All employees are required to wear natural-fiber clothing and safety shoes or boots and safety glasses when handling hazardous wastes munitions. In addition, employees at the OD unit are required to wear safety glasses with side shields and safety shoes, or other footwear approved by the Environmental, Health, & Safety Department. Many operations also require employees to wear gloves.

The Environmental, Health, & Safety Department visits the operations intermittently to conduct safety inspections and audits. All employees working at the OD unit are trained in hazardous waste management and have received the required HAZWOPER training and annual RCRA refresher training. A full discussion of personnel safety training can be found in Section H of this application.

Proper response to a fire involving explosives consists of withdrawal (evacuation) and protection followed by remedial actions when safe conditions return. Because of the fundamental requirement for evacuation in the event of a fire, MLAAP intentionally did not install fire extinguishers or fire hydrants within the areas utilized solely for thermal treatment operations, thereby encouraging immediate evacuation as outlined in treatment area SOPs. Ignition sources without a permit from MLAAP's Environmental, Health & Safety Department and smoking, except in designated areas, are prohibited in the OD Unit.

E-3(f) Releases to the Atmosphere

Open detonation operations result in releases to the atmosphere. MLAAP thermal treatment operations are conducted in a manner to reduce and/or minimize those releases.

Open detonation at the OD unit will be conducted with engineering controls, which greatly reduces emissions to the atmosphere. Waste munitions are covered with soil or water before treatment. NEW is held to less than 500 pounds. Also, increased heat and pressure promotes more complete combustion. Aboveground open detonation is limited to dropped or potentially dangerous items, and is typically conducted with a NEW of less than 15 pounds.

The maximum quantity of each type of waste per treatment operation and the operating time frame is:

- OD Unit, up to 20 pits — 500 pounds NEW of waste munitions, all types conventional, fixed and bulk per pit per treatment. Operational maximum is 10,000 pounds per day between 6:00 a.m. and 7:30 p.m. (daylight hours only).

The meteorological conditions under which thermal treatment is conducted at the OD unit are detailed in Section D of this application.

E-4 PREVENTION OF ACCIDENTAL IGNITION OR REACTION OF WASTES

The prevailing characteristic of all hazardous waste munitions treated at the OD unit is reactivity due to explosive (munitions) content. Those wastes are handled with the same safety precautions as are containerized explosives or finished munitions. The following specific precautions that prevent accidental reaction of those materials reflects those outlined in "Department of the Army Technical Manual, TM 9-1300-214, MILITARY EXPLOSIVES" Chapter 15.

- Use of radio transmitters in the area is limited.
- No ignition sources (e.g., strike anywhere matches, cigarette lighters) are allowed within the OD unit, except by permit from MLAAP's Fire and Safety departments.
- Smoking is prohibited within the OD unit, except in designated controlled locations.
- Forklifts are equipped with spark-arresting devices.
- Only approved non-sparking tools and equipment are allowed within the treatment units.
- Natural fiber work clothes are required; clothing that produces or generates static electricity is prohibited.
- All hazardous waste treatment units are located at least 50 feet from the MLAAP boundary.
- During electrical storms, lightning strikes are monitored, all waste munitions are secured, and personnel evacuate.

- All equipment, treatment units, and personnel handling waste munitions at the miscellaneous thermal treatment units are grounded to reduce the potential for buildup of electrical charges.
- Waste munitions are packaged in containers that are designed to reduce and/or eliminate the potential for accidental initiation.
- All waste munitions that require the use of squibs and/or demolition cord and detonation terminals have all wiring and components checked for stray currents and battery connection, using a multimeter or equivalent before the train is wired.
- A Hot Work permit is required for all welding, soldering, and operations of spark-generating equipment and internal combustion engines (outside motor vehicle operation). The permits are issued by the Environmental, Health, & Safety Department.

Flare components and other packaged ignitable compositions are submerged in diesel to desensitize the materials and prevent accidental ignition. Otherwise materials are handled like explosives.

Only conventional waste munitions and their components are handled, treated, and managed at the OD unit. As no other wastes are treated, handled, stored and/or managed at these locations, mixing of incompatible wastes is not probable. In the classic sense, mixing incompatible wastes may occur in combining explosive devices. This information is presented in Chapter 4, Storage Compatibility System of the "The Department of Defense (DOD) Instruction 4145.26, DOD Contractor Safety Requirements for Ammunition and Explosives" dated March 2008. Although the instructions are titled for storage of munitions, the system is utilized in the treatment of waste munitions until the moment of treatment. At the moment of treatment, incompatible materials are utilized to initiate the treatment process and deactivate the waste munitions. General and specific requirements are specified in SOP G-21 (Demolition Activities), the Explosive Safety Submission (ESS), MR-QAPP, and APP (excerpts located in Appendix D-2 respectively).

SECTION F

INSPECTION SCHEDULE

In accordance with 40 Code of Federal Regulations (CFR) 264.15 and CFR 270.14(b), and Tennessee Hazardous Waste Management Regulations 0400-12-01-.06 and 0400-12-01-.07, Milan Army Ammunition Plant (MLAAP) must inspect its facility for malfunctions and deterioration, operator errors, and other conditions that may cause or lead to release of hazardous constituents to the environment or a threat to human health. This section comprises the written schedule for inspecting monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment that are important to preventing, detecting, or responding to environmental or human health hazards at the miscellaneous thermal treatment units.

F-1 INSPECTION SCHEDULES

All hazardous waste associated structures at MLAAP are routinely inspected for structural deterioration, releases, fire hazards, safety or security issues, equipment malfunctions, and operator errors. These inspections are conducted on a schedule so as to identify problems in time to correct them before they harm human health or the environment.

Daily, weekly, and operating inspections are performed for management of hazardous waste. These inspections are performed by the appropriate departments (Operations, Maintenance, Fire, Security, etc.), throughout the facility. The open detonation (OD) unit is inspected after each use.

The general inspection schedules — which list the item to be inspected, the type of problem to be checked, and the frequency of inspections — are in Table F-1.

Table F-1
Inspection Schedule
Miscellaneous Thermal Treatment Unit Areas
Hazardous Waste Treatment Operating, Monitoring, and Structural Equipment, Communication and Alarm Systems,
Decontamination Equipment, Personal Protective Equipment and Heavy Machinery & Equipment

Item Inspected	Types of Problems	Frequency of Inspection
Gates/Locks	Broken, unsecured	Daily ⁽¹⁾
Warning Signs	Missing, damaged	Weekly ⁽²⁾
Two-Way Radios	Not operating	Before each use ⁽⁴⁾
Fence (around ADA), Gates, Locks (Internal Security) ⁽⁷⁾	Damaged, corroded, mowing, washouts	Weekly
Shovels, Brooms, Dust Pans	Missing, damaged	After each use ⁽⁶⁾ ; weekly at a minimum
Absorbent	Inadequate supply	After each use; weekly at a minimum
Repack Drums	Missing/damaged	Weekly
Other Containers	Corrosion, leakage	Weekly
Heavy Equipment Parking Area	Leaks, releases	Daily (when used)
Splash Aprons and gloves	Absent, holes, and/or contaminated	Daily; after use (gloves)
Plastic Tarps	Ripping, holes, and/or contaminated	Before use
Soap and Detergent	Absent	Before use
Plastic bags for Decon Waste	Absent, ripping	Before use
Paper Towels	Absent, contaminated	Before use
Inflatable Pools for Decon Water	Absent, ripping, holes	Before use
Scrub brushes	Absent, contaminated	Before use
Communications	Operation	Daily and weekly alarms
Fire Hydrants	Flow, operation, damage	Annually
Face Shields	Cleaning, damage	Daily or before use
Fire Extinguishers	Proper charge, clogged nozzle	Monthly ⁽³⁾ and after use
Sampling Supplies	Cleanliness, damage, and quantity	Before use
Earth-Moving Equipment (likely 2 or 3 machines at OD Unit)	Operation, maintenance, service (Operation and Service Personnel)	Daily
Trucks , Vans/Pickups	Operation, maintenance, service	As required
Remote Firing Device	Continuity, stray current	Before each use
OD Area	Various	Spot safety and quality inspections performed by the UXOSO and UXOQC
1,000 Gallon Water Wagon		Semi-annually

Notes:

- (1) Daily inspection means once per day when the unit is operating
- (2) Weekly inspection means once per 7-day period when the unit is operating
- (3) Monthly inspection means once per calendar month when the unit is operating
- (4) Before each use inspection means unit is inspected before batch treatment
- (5) Semi-annually means once every 6 calendar months when the unit is operating
- (6) After each use inspection means unit is inspected each day

F-2 Inspection Requirements

F-2(a) General Inspection Requirements

Inspections at the OD unit are conducted under the direction of Site Management trained in hazardous waste management. Inspections are documented on a log and all inspection logs and records are maintained by Site Management at contractor-utilized office space; copies will be furnished to Army Environmental. The log sheets provide for notations regarding the hazardous waste unit location, date, and time of inspection, condition of units, inspector's name and badge number, and a column for observations and notations of remedial/corrective actions. See attached examples of inspection logs for the general inspection schedule in Appendix F-1.

Hazardous waste processes conducted at the OD unit are inspected for leaks, releases, and/or fugitive emissions before and after each use. On-the-spot inspections during thermal treatment are not possible, due to the safety hazards to personnel involved.

The inspector is required to indicate whether any condition is satisfactory or unsatisfactory, and to follow up on unacceptable notations with the date and nature of corrective actions. All logs are retained for at least five years.

F-2(b) Frequency of Inspections

The OD unit are inspected according to the frequencies outlined in Table F-1 and discussed in Section F-2(a). Perimeter fencing, locks, and gates are checked by the Security Department. The OD unit security fencing is inspected weekly.

F-2(c) Remedial Action

During an inspection, the authorized inspector can initiate corrective action if unacceptable conditions are discovered. If emergency maintenance is required, corrective action will be taken immediately. In the event of a spill or release, the inspector will take action as specified in Section G. Any action taken will be documented.

Any remedial action required that cannot be readily initiated by Site Management shall be reported immediately to one of the following in the order given: the Contractor PM, USACE PM, Army Environmental Manager, and MLAAP Security. Conditions requiring reportable remedial action include equipment breakdowns, equipment malfunctions, minor injuries, and any non-threatening problem outlined on the inspection form.

Remedial action that is required for threats to human health and/or the environment, such as fire and ambulance service, must be reported by calling (731) 686-6565. Remedial action requirements that are a threat to human health and/or the environment require implementation of the Contingency Plan and must be immediate.

If an immediate remedial action that is not a threat to human health or the environment is required at the OD unit, the supervisors of their respective units or the Army Environmental Manager will be notified. In turn, those individuals will inform the appropriate department by telephone to receive the necessary assistance. If an emergency remedial action is required, the Supervisors of the appropriate area or Site Management will implement the Contingency Plan as outlined in Section G.

SECTION G

CONTINGENCY PLAN

G-1 CONTINGENCY PLAN

This Hazardous Waste Contingency Plan for the Milan Army Ammunition Plan (MLAAP) is required by 40 Code of Federal Regulations (CFR) 270.14(b)(7), 40 CFR 264 Subpart D, and Tennessee Hazardous Waste Management Regulations (THWMR) 0400-12-01-.06 and 0400-12-01-.07. This is a stand-alone contingency plan for the OD unit only. The MLAAP Spill Prevention and Response Plan covers contingency planning information for the remainder of the MLAAP installation.

MLAAP is a government owned, contractor operated (GOCO) Military Industrial Installation assigned the following general responsibilities:

- Operation and maintenance of facilities in support of current operations
- Support services of tenants
- Custodial maintenance
- Monitor contract efforts performed in accordance with the current contract and policy

MLAAP's operations result in the generation of waste munitions, including propellants, explosives, and pyrotechnics (PEP) that require treatment through open detonation (OD) at the OD unit. The information in this section details actions and plans for contingencies related to unplanned incidents as a result of miscellaneous thermal treatment operations.

G-1(a) Actions to Take in Case of Emergency

The provisions of this plan must be carried out immediately whenever there is an unplanned fire, explosion, or release of hazardous waste or hazardous waste constituents to the air, soil, or surface water that could threaten human health or the environment. The Contingency Plan will be implemented under the following circumstances:

1. Unplanned Fire/Explosion
 - a. Fire threatens areas outside the OD unit
 - b. Fire threatens areas outside the MLAAP facility

- c. Fire-fighting agents result in contaminant runoff
- d. Imminent threat of explosion

2. Releases/Leaks

- a. Releases outside of release contaminant area
- b. Fire/explosion hazards exist due to release of reactive wastes

Only waste munitions and their components are treated at MLAAP's OD unit; therefore, regulations in 40 CFR 264.171 (Subpart I — Use and Management of Containers) do not apply to this permit application.

G-1(a)(1)Arrangements with Local Authorities

MLAAP will rely upon the city of Milan for emergency responses to fire, explosions, releases, and other types of emergencies. The city of Milan maintains a well-trained and well-equipped 24-hour fire department. The fire department, along with standard mobile fire-fighting equipment, also maintains a HAZMAT-equipped mobile van. The fire department is trained in and has experience with the special nature of wastes treated at MLAAP. MLAAP maintains a well-trained and staffed security department capable of providing security and other services required in contingencies that may arise at MLAAP. Medical and ambulance services are available at the city of Milan.

This Contingency Plan has been coordinated with the various MLAAP installation departments who respond to emergencies.

G-1(a)(2)Local Agency Resources

Emergencies at the OD unit are not expected to have impact outside the areas surrounding the units. MLAAP's security department staff is equipped to handle the types of emergencies that may occur at the OD area.

Local agencies such as fire and police departments are well equipped and trained in managing emergencies. Munitions are no longer manufactured or stored on MLAAP. The City of Milan Hospital will provide medical services not available at MLAAP.

A copy of the Contingency Plan has been sent to the City of Milan Hospital, local authorities and agencies, which will provide services or assistance to MLAAP during an emergency.

Communication concerning emergencies at MLAAP to agencies or personnel outside the requirements of the Contingency Plan must be done or approved for release by the Army Public Affairs Office (PAO).

G-1(b) Emergency Coordinators

In the event of an emergency at the OD unit, the discoverer should contact the following:

Emergency Coordinator

Chief Johnny Lock
City of Milan Fire Chief,
(731) 686-0441 (Work)
(901) 491-3355 (Cell)

Alternate Coordinator

John Williams
City of Milan Asst. Fire Chief,
(731) 686-3996 (Work)
(731) 487-3745 (Cell)

Milan Fire Dept Address:

7029 Telecom Dr.
Milan, Tennessee 38358
911 (emergency)

The Emergency Coordinator and Alternate Emergency Coordinator have the authority to commit all necessary resources in the event of an emergency, and have been trained in Contingency Plan implementation. Until Emergency Coordinators from the Milan Fire Department arrive, the UXO Safety Officer (UXOSO) will be the interim emergency coordinator to ensure emergency response actions, such as evacuations, begin.

G-1(c) Location and Description of Emergency Equipment at the Facility

The Emergency Coordinator has the authority necessary to commit considerable resources at the MLAAP OD unit, including emergency equipment listed in Table F-1 of this Permit Application.

G-1(d) Evacuation Plan

The OD unit personnel will determine if evacuation is necessary due to unplanned fire and/or detonation. If the Contingency Plan is activated, evacuations are assumed to be necessary in the event of an emergency. The Emergency Coordinator and Site Management will determine when the area can be safely re-entered.

To ensure that all personnel have evacuated the area, the UXOSO or designated personnel will assist by searching the area. The assembly points for evacuees are determined in the safety brief before any work for the day is conducted to allow appropriate assembly points for the work area. Diagrams displaying evacuation routes and alternate evacuation routes from the OD unit are in Appendix G-1. In emergency events involving reactive waste (munitions), or incidents at or near where reactive wastes are managed, only evacuation routes shown in Appendix G-1 will be used.

At the OD unit, a telephone call is made to Site Management with a warning to evacuate. A responsible person is always stationed at shooting barricade W-53 when activities are being conducted at the OD unit. The person will wave a red flag to warn field personnel to evacuate.

G-1(e) Location and Distribution of Contingency Plan

G-1(e)(1) Maintained at the Burning Ground and Hazardous Waste Storage/Handling Areas at MLAAP

Table G-1 lists the locations of copies of the Contingency plan maintained at areas where hazardous waste is treated at MLAAP.

**Table G-1
Location of Contingency Plan
Hazardous Waste Treatment Area — MLAAP**

Office Location	Building	Number of Copies
OD Shooting Barricade	Magazine W-53	1
Site Trailer	Site Trailer (outside ADA fence)	1

At the OD unit, a copy of the Contingency Plan is maintained in areas that are or could be manned for eight hours or more per operating day. Additional plans were distributed to departments/organizations/agencies listed in Table G-2.

G-1(e)(2) Submitted to Other MLAAP Departments and Local Authorities

The Contingency Plan was made available to external agencies.

**Table G-2
Contingency Plan Distribution List**

MLAAP Departments and Local Agencies	No. Copies
AO Site Manager	1
AO EHS Manager	1
AO Chief of Protective Services	1

AO Security Specialist	1
AO EHS Specialist	1
AO Facilities Maintenance Supervisor	1
Weston Project Manager	1
PIKA Project Manager	1
Milan Fire Department	2
City of Milan Hospital	1
Army Commander's Representative	1
Army Environmental Manager	1

G-2 EMERGENCY PROCEDURES

G-2(a) Notification

Treatment at the OD unit involves the use of explosion. In the event of an emergency, the site supervisor or safety personnel must be notified by the discoverer or their supervisor. The Site Supervisor must determine if a release, unplanned fire, or explosion could threaten human health or the environment either inside or outside the facility. If so, the Site Supervisor must notify MLAAP Security, Army Environmental Manager, AO EHS Manager, and Emergency Coordinator if necessary. Because of the remoteness of the OD unit and the limited amount of waste staged and treated at the OD unit, it is unlikely that a release, fire, or unplanned explosion would affect onsite and/or offsite personnel, only those involved in the treatment operations and/or the response personnel.

The Emergency Coordinator, Army Environmental Manager, or designee must report any releases of hazardous waste exceeding the reportable quantity (RQ) or unplanned fire or explosion involving hazardous waste. The findings must be reported immediately to the Tennessee Emergency Management Agency (TEMA) using its 24-hour number (615) 741-0001, and the National Response Center using its 24-hour toll-free number (800) 424-8802. Information to be provided to those agencies includes:

- Name and telephone number of reporter
- Name and address of facility
- Time and type of incident (e.g., release, fire)
- Name and quantity of materials involved, to the extent known
- The extent of injuries, if any
- The possible hazards to human health or the environment where this is applicable

The Emergency Coordinator will also notify MLAAP Security if their assistance is needed.

If the emergency is determined to be outside the capabilities of the Milan Fire department and there is a potential for the release, fire, or unplanned explosion to spread beyond the boundaries of MLAAP, notification will be made to the affected surrounding county and municipal Fire and EMS departments. The emergency telephone number at MLAAP is (731) 686-6565 and may be used to report emergencies. Dialing that number will connect the caller with the MLAAP security department. The caller will be asked to provide the following information:

- Name
- Exact location
- Location of incident
- If fire is involved
- Size of release
- Extent of injuries
- Time Incident Occurred

The caller will then be given instructions as to what action, if any, they are to conduct.

G-2(b) Identification of Hazardous Waste

Supervisory Safety and Environmental personnel will determine the types of wastes involved or potentially involved in the emergency (release, fire, or explosion). The exact source, amount, and areal extent of materials involved in the emergency are to be determined by reviewing the site logs, personal knowledge, information supplied by site personnel, observation if the area can be approached safely, or through any other available source (e.g., chemical analysis). The hazardous wastes treated at MLAAP include waste munitions and their components.

G-2(c) Hazard Assessment

Supervisory Safety and Environmental personnel will assess possible hazards, both direct and indirect, to human health and/or the environment. At a minimum, this assessment will consider:

- The waste(s) involved (explosives or debris)
- Quantity (RQ, multiple containers)
- Proximity to surface water (distance to standing water)
- Local surface drainage patterns (slope, ditches)
- Potential for explosion
- Potential for spreading (pavement, soil, slope)

G-2(d) Threats to Human Health or the Environment Outside the Facility

The OD unit are remotely located 4,750 feet from the nearest MLAAP facility boundary on federally owned property. It is highly unlikely that any sudden event, such as fire, explosion, or release, would affect MLAAP boundaries or personnel and property outside MLAAP boundaries. This determination is based on the physical size of the installation (over 22,000 acres), the remoteness of the treatment unit within the installation, the distances from the treatment unit to MLAAP's boundary, and land use outside MLAAP boundaries. Most of MLAAP's initial response to fire and/or explosions would be to evacuate (clear) the area until it is safe to re-enter.

G-2(e) Control Procedures

Potential emergency incidents at MLAAP are classified as releases or unplanned fires/explosions. Specific guidance relating to those types of incidents is provided in the following paragraphs.

G-2(e)(1) Fire/Explosion

The Milan Fire Department, Site Supervisor, AO Security Chief, AO EHS Manager and Army Environmental Manager must be notified in the event of the discovery of any unplanned or uncontrollable fire. For unplanned fires and/or explosions at the OD unit involving hazardous waste, notification will be made by two-way radio or telephone.

Firefighting and control will be conducted by the Milan Fire Department. Fire control will be limited to extinguishing fires outside the explosion danger zone surrounding the OD unit. In most cases, it is preferable to allow burning to continue and keep personnel away until reactive material is expended. An exception would be a situation in which personnel were injured near the burning waste, and a rescue attempt was deemed feasible by the Milan Fire Department.

The evacuation may be as far as one-half mile. Evacuation of the OD unit during a fire, explosion, or release is discussed in this OD unit Part B Permit Application.

In the event of a spill, a sample of the run-off water and a composite soil sample, taken 6-inches deep within the impoundment area from three random locations, will be collected and analyzed for subject hazardous constituents.

An additional composite sample of soil will be collected in the same manner described above. The sample will be up gradient from the spill and utilized for a background sample.

For hazardous constituents, remedial actions will be based upon EPA Regional Screening Levels . For explosives, these levels will be determined by the MLAAP Record of Decision for OU5. Action levels are as follows: hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) - 10 milligrams per kilograms and 2,4,6-trinitrotoluene (TNT) — 25 milligrams per kilograms.

If the concentration of RDX or TNT in the soil sample exceeds action levels, the soil will be considered contaminated and the area extending five feet beyond the perimeter of the temporary impoundment will be excavated, containerized, and held for subsequent treatment onsite or disposal offsite.

Following the excavation, a confirmation sample comprised of three 6-inch deep random soil samples will be analyzed for RDX and TNT. If those samples are contaminated above treatment limits, an additional 6-inch soil layer will be excavated. The excavation and sampling will continue until uncontaminated soil is reached. The excavated area will be backfilled with clean soil and re-graded and the natural drainage pattern reestablished.

At the OD unit, proper response to a fire involving explosives consists of withdrawal and protection (evacuation), followed by remedial actions when safe conditions return. Standard Operating Procedures require the immediate evacuation of personnel from the treatment area. Firefighting is not ordered due to the potential for explosions.

G-2(e)(2)Leaks and Releases

The most probable causes of emergency releases of hazardous waste are vehicle accidents during shipment of waste, releases during unloading operations at the OD unit, debris, or residue following thermal treatment. In the event of a RQ release, the Emergency Coordinator will be immediately notified. The Emergency Coordinator and alternate are on call 24 hours a day. Until the Emergency Coordinator's arrival on scene, the on-duty alternate emergency coordinator will act to prevent the spread of a release and contain the emergency. The on-duty alternate emergency coordinator may also act for the Emergency Coordinator through voice communication, until the Emergency Coordinator's arrival onsite. The Emergency Coordinator will make an immediate assessment of the degree of hazard posed by the release. Based on that assessment, the Emergency Coordinator will initiate one or more of the following actions:

- Evacuate personnel to a safe location, if they have not already done so.

- Direct-trained personnel to handle the release under his supervision.
- Direct the fire department to mobilize and stand by at the site of the release for fire protection.

Once the Emergency Coordinator, in conjunction with appropriate emergency response personnel, determines that it is safe for cleanup operations to begin, employees will be directed to bring emergency equipment (brooms and non-sparking shovels) and containers to the release/leak location. Personnel involved shall be instructed in management of hazardous waste, safety procedures, and use of emergency equipment. All released material will be removed and containerized.

One inch or more of soil will be excavated from beneath the released material to ensure adequate removal of contaminated soils. The Emergency Coordinator must develop and implement a protocol to assess soil contamination in the event of a liquid release. Contaminated solids will be excavated, characterized, and containerized for offsite disposal as hazardous or non-hazardous wastes or treated onsite if the waste contains explosive residues.

G-2(e)(3) Prevention of Recurrence of Spread of Fires, Explosions, or Releases

The spread of released material will be prevented by the immediate removal of any such material and contaminated soil. Within the OD unit, fire controls are provided in the form of clear zones and fire breaks. Firebreaks and clear zones may be periodically maintained around the Waste Management Area, which encompasses all miscellaneous thermal treatment operations.

G-2(f) Storage and Treatment of Released Material

The Environmental Manager or designee and Site Supervisor will ensure that all released material, cleanup debris, and contaminated soil is containerized and stored for later testing and disposal or treatment. Contaminated soil will be containerized (lined if required), labeled properly, and stored. The containerized contaminated soil will be shipped offsite for disposal or the soil will be capped in accordance with the onsite CERCLA program. MLAAP is a generator of hazardous waste and currently operates under EPA ID No. TN0210020582; all hazardous waste generated during emergency response will be handled in accordance with the Resource Conservation Recovery Act generator regulations.

Recovered waste munitions will be appropriately containerized, and may be treated at the OD unit. Munition components will be containerized in appropriate containers.

Released liquids (if any) will be pumped into containers and/or solidified using compatible absorbents, resulting in solids containerized for shipment offsite for disposal.

G-2(g) Monitoring for Leaks, Pressure Buildup, Gas Generation, or Ruptures

If the facility shuts down due to an emergency, all personnel are evacuated to a safe location. There is no monitoring for leaks, pressure buildup, gas generation, or ruptures during emergencies. If monitoring conducted during the emergency is deemed necessary, it would be directed by the Emergency Coordinator in consultation with site Safety and Explosive Safety Personnel.

G-2(h) Incompatible Wastes

Waste military munitions are stored based on compatibility, i.e., fuze and/or primers are not stored with bulk propellants, explosives, and PEP. All wastes generated at MLAAP are characterized prior to being placed into the temporary storage magazine set up within the OD Unit for the purpose of temporarily storing waste munitions and their components until treatment.

G-2(i) Decontamination Procedures

After an emergency event, all emergency equipment will either be decontaminated or replaced. Equipment will be decontaminated using, as appropriate, water and soap solutions, or alcohol. Decontaminated equipment will then be serviced, tested, and/or inspected for reuse. Unusable emergency equipment will be characterized and disposed in accordance with state and federal regulations and replaced with serviceable equipment. Any waste liquids generated from decontamination will be tested to determine the methods for proper disposal. A list of decontamination equipment, containment for disposal of contaminated non-reusable equipment, and decontamination solutions are listed in Table F-1 of this Permit Application.

Resulting wastewaters will be collected and taken to MLAAP's OU3 or OU4 Groundwater Treatment Facility for treatment. Before operations are resumed, all equipment listed in Table F-1 will be decontaminated, inspected, and re-serviced for use or replaced. The emergency equipment and drums needed for removing released material will be maintained in vehicles, the OD shooting barricade, and the site trailer.

The contractor is responsible for forklifts, ramps, trucks, and earth-moving equipment that might be used in an emergency.

Personal protection equipment will be utilized as required for the specific hazards associated with the release, including but not limited to protective gloves, splash suits, safety glasses, and protective boots for solvent removal.

Many of the items listed in Table F-1 are for decontamination of response equipment and personnel. These items include the use of items such as a 1,000-gallon water wagon to transport contaminated water from the site for treatment. Other decontamination items might include:

- Plastic tarps for lining the decontamination area
- Soap and detergent for removal of contamination
- Rubber aprons to wear during decontamination operations
- Plastic bags — disposable to package decontamination waste
- Paper towels for clean-up during decontamination
- Decontamination showers for decontamination of personnel
- Inflatable pools to capture decontamination water from shower
- Scrub brushes for hand scrubbing during decontamination
- Barrier tape to mark off decontamination zone
- Drums for packaging decontamination water and debris
- Garden sprayer with deionized water for rinsing personnel/equipment

Heavy equipment will be moved to “cleanout areas” prior to any fueling, maintenance, or removal from the site. Heavy Equipment will be cleared of MEC by unexploded ordnance qualified personnel (UXOQP). Gross soil and mud accumulation will be removed by brushing and/or scraping. Heavy equipment is intended to remain on-site for the duration of the fieldwork. Prior to removal from the site, heavy equipment will be washed and/or rinsed, as needed, with water to remove residual soil. Existing decontamination pads at the OD Unit are intended to be used.

G-2(j) Notification

The USEPA Regional Administrator, Tennessee Department of Environmental Conservation, and TEMA, as appropriate, will be notified that post-emergency equipment maintenance has been performed and operations will be resumed.

G-2(k) Record Keeping Requirements

In addition to the verbal notifications to be initiated by the Emergency Coordinator or Army Environmental Manager, written follow-up reports will be prepared. All emergencies that require

implementing the Contingency Plan will be reported in writing within 30 days to the Administrator, USEPA Region 4, Tennessee Department of Environmental Conservation, and TEMA.

The report will detail the name of the facility, date, time, and type of accident, type, and quantity of material involved, extent of injuries, an assessment of the impact on human health and the environment, and the quantity and disposition of material released.

After an emergency, the Emergency Coordinator will review the Contingency Plan for effectiveness and make any necessary changes. The plan will also be reviewed when the Emergency Coordinator, emergency equipment, Hazardous Waste Management Plan, or the Part B Permit Application are changed. Records of the incidents and any critiques will be filed at the Army Environmental or AO EHS Office.

G-2(I) Procedures for Emergency Permitting

A temporary authorization (i.e., emergency permitting) related to operations at the OD unit as a result of emergency response may be requested by MLAAP under 40 CFR 270.42(e). MLAAP may request the temporary authorization for Class 2 or 3 modifications listed in 40 CFR 270.42 related to the Contingency Plan such as changes in emergency response procedures or removal of equipment from the emergency equipment list. The modifications will only be requested if they are necessary to achieve one of the following objectives: to facilitate timely implementation of closure or corrective activities; to allow treatment or storage in tanks, containers, or containment buildings; to prevent disruption of ongoing waste management activities; to enable response to sudden changes in the types or quantities of waste managed under the facility's permit; or to facilitate other changes to protect human health and the environment.

The temporary authorization request will include a description of the activities to be conducted, an explanation of the necessity for the temporary authorization, and sufficient information to ensure compliance with 40 CFR 264 standards. Within seven days of submitting the authorization request, MLAAP will send a notice about the temporary authorization request to all persons on the facility mailing list and appropriate units of the state and local government.

The temporary authorization will not extend more than 180 days.

G-3 Amendment of Contingency Plan

Per 0400-12-01-.06(4)(e), the Contingency Plan will be reviewed and amended, when any of the following occur:

1. The facility permit is revised;
2. The plan fails in an emergency;
3. The facility changes its design, construction, operation, maintenance, or other circumstances in a way that increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;
4. The list of emergency coordinator changes; or
5. The list of emergency equipment changes

SECTION H

PERSONNEL TRAINING

This section details the Milan Army Ammunition Plant (MLAAP) personnel training program as required by 40 Code of Federal Regulations (CFR) 264.16 and CFR 270.14(b)(12), and Tennessee Hazardous Waste Management Regulations 0400-12-01-.06(2)(g) and 0400-12-01-.07(5)(a)(1)(xii).

H-1 OUTLINE OF THE TRAINING PROGRAM

Personnel responsible for handling hazardous waste, including military munitions, MLAAP have a training schedule/program that is a function of their job title and description. Job descriptions for employees are involved in the management and handling of hazardous waste, open detonation (OD) activities and emergency response activities related to waste munitions and propellants, explosives, and pyrotechnics (PEP) are listed as follows. Personnel training requirements are listed in Table H-1.

H-1(a) Job Descriptions

Army Environmental Manager

- The Army Environmental Manager is responsible for the entire facility's environmental compliance program elements. The job position requires a Bachelor's degree and five years experience.

AO EHS Manager

- Work with Army Environmental Manager to exercise responsibility for the facility's environmental compliance program elements. The job position requires a Bachelor's degree and five year's experience.

Project Manager

- Exercise overall responsibility for the management and completion of the project.
- Be responsible and accountable for overall project safety.
- Ensure that project personnel (including subcontractor personnel) comply with EHS regulations, program requirements, and procedures.
- Ensure development and implementation of project APPs and indicate concurrence with final plans after required EHS reviews.
- Ensure project personnel meet applicable safety certification requirements.
- Ensure project support is acquired from appropriately qualified safety personnel such as the EHS Director, EHS Manager, and UXOSO.

- Ensure project personnel comply with applicable EHS requirements and corporate or client procedures.
- Halt any project work activities that represent an imminent hazard.
- Ensure appropriate safety equipment and materials are provided to the project.
- Ensure timely and accurate reporting and investigation of incidents, accidents, or injuries involving project personnel, with support from EHS management.
- Ensure corrective actions are implemented completely.
- Ensure proper response and internal notification regarding inspections by regulatory agencies.
- Ensure all project personnel have met the site-specific experience and training requirements.

EHS Director (Weston)

- Evaluate changes to the APP based on field and occupational exposure, as necessary.
- Develop, maintain, and monitor implementation of the SSHP. Visit the project, as needed, to audit the effectiveness of the SSHP.
- Remain available for project emergencies.
- Develop modifications to the SSHP. Evaluate occupational exposure monitoring/air sampling data and adjust SSHP.
- Serve as a QC staff member. Approve the APP and SSHP by signature.

EHS Manager (Weston)

- Maintain the WESTON EHS Program, the APP, and any addendums.
- Conduct site visits, as necessary, to audit the effectiveness of the APP.
- Serve as a QC staff member.
- Serve as a technical safety advisor and provide technical assistance and support.
- Review APP and SSHP and provide signature.

Senior UXO Supervisor (SUXOS)

- Exercise overall on-site responsibility for the management and completion of the project. Be responsible and accountable for on-site project safety.
- Exercise overall on-site responsibility for ensuring that project personnel (including subcontractor personnel) comply with EHS regulations, program requirements, and procedures.
- Ensure development and implementation of project APP and indicate concurrence with final plans after required EHS reviews. Ensure on-site project personnel meet applicable safety certification requirements.

- Ensure project support is acquired from appropriately qualified safety personnel, such as the EHS Manager and UXOSO.
- Ensure on-site project personnel comply with applicable EHS requirements and corporate or client procedures. Halt any project work activities that represent an imminent hazard.
- Ensure appropriate safety equipment and materials are provided to the project.
- Ensure timely and accurate reporting and investigation of incidents, accidents, or injuries involving project personnel, with support from EHS management.
- Ensure corrective actions are implemented completely.
- Ensure proper response and internal notification regarding inspections by regulatory agencies.
- Ensure all on-site project personnel have met the site-specific experience and training requirements.

UXO Safety Officer (UXOSO)

- Serve as UXOSO as a full-time responsibility. Be present at the project site. Directly communicate with the PM and the EHS Manager.
- Conduct daily safety and health inspections. Maintain a written log to identify areas/operations inspected, dates of inspection, hazards identified, recommended corrective actions, and estimated and actual dates of corrections. Attach safety inspection logs to Contractor's daily production report.
- Establish a Safety and Occupational Health (SOH) Deficiency Tracking System that lists and monitors outstanding deficiencies until resolution.
- Attend the pre-construction conference; pre-work meetings, including preparatory meetings; and periodic in-progress meetings.
- Collaborate with supervisors, foremen, or Collateral Duty Safety Officers (CDSOs) to conduct safety meetings monthly for supervisors and weekly for all workers. Maintain documentation of meetings, including the date, persons in attendance, subjects discussed, and names of individual(s) who conducted the meeting. Safety meetings shall review past activities, plan for new or changing operations, review aspects of appropriate AHAs, establish safe working procedures for anticipated hazards, and provide pertinent SOH training and motivation.
- Ensure subcontractor compliance with safety and health requirements.
- Conduct or coordinate project-specific training.
- Provide and keep a record of site safety orientation and indoctrination for Contractor employees, subcontractor employees, and site visitors.
- Review the APP and AHAs for compliance with EM 385-1-1; and approve, sign implement, and enforce them. Additionally, coordinate modifications to the APP with appropriate site and EHS personnel.

- Report any incidents and near misses that occur on-site to the PM and the EHS Manager. Conduct mishap investigations and complete required accident reports.
- Use and maintain OSHA Form 300 to log work-related injuries and illnesses occurring on the project site for the prime contractors and subcontractors, and make available to the Contracting Officer (KO) upon request. Post and maintain the Form 300A on the site Safety Bulletin Board.
- Maintain a list of hazardous chemicals that are on site and their Safety Data Sheets (SDSs).
- Maintain exposure data hours.
- Maintain a weekly list of high hazard activities involving energy, equipment, excavation, confined space entry, and work at elevation. Be prepared to discuss details during QC meetings.
- Maintain applicable safety reference material on the job site.
- Collaborate with supervisors to remove employees from exposure to work hazards or the work site when they are observed acting in an unsafe manner and verify that appropriate supervisory action has occurred prior to the employees returning to the work environment.

UXO Quality Control Specialist (UXOQCS)

- Manage all aspects of the project quality in the field. Coordinate with subcontractors.
- Report quality issues to the PM.
- Document safety inspections in the daily log and verify accuracy and daily submission of the daily safety report.
- Document EHS issues and deficiencies in reports/submittals, and include corrective actions, timeline, and personnel responsible for correction. Follow up to ensure corrective actions are taken within the identified timeline and document corrections in Inspection Reports.
- Ensure discussions of the deficiency list on a monthly basis with all project team members and document meeting discussions in reports/submittals.
- Collaborate with UXOSO to track subcontractor AHAs during the submittal phase.
- Responsible for implementation of on-site waste management (UFGS 01 74 19 Construction Waste Management and Disposal and UFGS 01 45 00.00 10 Quality Control).
- Coordinates with MLAAP environmental staff to ensure compliance with RCRA treatment permit and TN hazardous waste regulations.
- Ensure team members are trained in accordance with the approved RCRA training plan.
- Oversees transport of hazardous material and conducts temporary storage inspections. This person determines if hazardous material is packaged and labeled correctly and that tracking documents are completed and assures that materials being transported are compatible.

Demolition Supervisor (UXO Tech III or as designated by SUXOS)

The SUXOS shall designate an experienced and knowledgeable UXO qualified person (UXOQP) to act as the Demolition Supervisor (Demo Sup). Demolition (treatment) activities will be conducted under the direct supervision of the Demo Sup, who will be ultimately responsible for demo personnel assignment, site communications during demo activities, and the oversight of setup and securing upon the completion of demo activities. The Demo Sup shall be responsible for providing a pre-demolition briefing and will ensure all other applicable forms, documentation, and records required are completed and signed by appropriate project personnel. The Demo Sup will make sure that the logs and records accurately reflect the demolition events conducted and the demolition materials used during that day's operations.

The Demolition Supervisor assigns workers to specific jobs to accomplish workload treatment schedules and directs personnel with respect to preparing material for destruction at the OD unit. The job requires thermal treatment of hazardous waste generated at MLAAP; verifying all hazardous waste treatment permit requirements are complied with; and determining and verifying all site inspection requirements for environmental compliance including water, solid, and hazardous waste. This individual supervises operations at the RCRA-regulated hazardous waste treatment facility. The OD unit is required to have an operating record and equipment inspection record prepared.

OD Unit Worker (UXO Tech I, II, or III)

The OD Unit worker performs duties as required for the operation of the OD unit. He/she is also responsible for the management of all hazardous waste generated at MLAAP's OD unit and verifies that all hazardous waste treatment permit requirements are complied with for site activities. The OD Unit worker determines and verifies all site inspection requirements for environmental compliance including water, and solid and hazardous waste.

Fire Chief

This role will be filled by the Milan Fire Department for any fire/explosion emergency onsite. The training requirements table below will not include this position.

Fire Captain / Assistant Chief

This role will be filled by the Milan Fire Department for any fire/explosion emergency onsite. The training requirements table below will not include this position.

Firefighter/Emergency Medical Technician (EMT)

This role will be filled by the Milan Fire Department for any fire/explosion emergency onsite. The training requirements table below will not include this position.

Firefighter/Paramedic

This role will be filled by the Milan Fire Department for any fire/explosion emergency onsite. The training requirements table below will not include this position.

OD Unit Incidental Spill Response Team

The UXOSO will manage an incidental spill response team made up of the OD unit field team for small, non-reportable spills, but will rely on the Milan Fire Department for reportable spills.

H-1(b) Training

MLAAP Standard Operating Procedure's (SOP's) MR-SOP-1, MR-SOP-2, MR-SOP-3, MR-SOP-4, and G-21, (Appendix D-2), specific to the OD Unit specify training needs for personnel associated with the Waste Management Area (WMA). Supervisors and operators assigned to the WMA are required to be thoroughly trained regarding the nature of the materials handled, the hazards involved, and necessary precautions in accordance with regulatory requirements and provisions in the above SOP's. Training consists of a combination of in-house classroom training, public training, instructor-led training (ILT), on-the-job training (OTJ), computer-based training (CBT), and/or individual instruction.

Personnel who handle, manage, or treat hazardous waste at MLAAP must not work unsupervised until all required training is completed. Within six months of being assigned to a hazardous waste associated task, MLAAP OD Unit personnel receive an introductory course in hazardous waste management. Hazardous waste management employees receive documented classroom refresher courses and OTJ. All training is documented, signed, and dated by the trainee and the person providing the training. All training records are retained for three years after the employee has been reassigned to duties other than hazardous waste. Table H-1 outlines training requirements for all employees that handle, manage, or treat hazardous waste at MLAAP OD Unit.

H-1(c) Training Content

OD unit personnel at MLAAP must successfully complete a training program that teaches them to perform their duties in a way that ensures compliance with applicable federal and state regulations, Army regulations, and plant SOPs. Training includes hazardous waste handling procedures relevant to the position in which they are employed, contingency plan implementation, and familiarization with

emergency procedures, equipment, and systems. Table H-1 outlines the job positions and their training requirements.

H-1(c)(1) Course Outlines

General Training

All employees are provided Hazard Communication (HAZCOM) training in accordance with 29 CFR 1910.1200. In addition to general training, portions of the training program are specific to the individual's job requirements and are designed to train the individual relative to actual job tasks. For instance, hazardous waste handling personnel are taught how to collect representative samples of ash, select proper containers and fill out hazardous waste labels, perform inspections, and operate forklifts, ramps, and other equipment used around hazardous waste. In addition, hazardous waste personnel are provided detailed safety training for working around reactive materials and/or wastes. All hazardous waste personnel are given detailed instructions on area evacuation, alarms, and emergency notification.

Table H-1
Training Requirements by Job Description for Employees

	Army Environmental Manager	AO EHS Manager	Project Manager	EHS Director (Weston)	EHS Manager (Weston)	SUXOS	UXOSO	UXOQCS	Demolition Supervisor (UXO Tech III or as designated by SUXOS)	OD Unit Worker (UXO Tech I, II, or III)	OD Unit Incidental Spill Response Team
Hazard Communication	X	X	X	X	X	X	X	X	X	X	X
40-Hour Hazwoper		X	X	X	X	X	X	X	X	X	X
24-Hour Hazwoper	X										
8-Hour OSHA Supervisor/Manager	X					X	X	X		X	
8-Hour Hazwoper Refresher	X	X				X	X	X	X	X	X
RCRA Hazardous Waste Initial Training	X	X				X	X	X	X	X	X
RCRA Hazardous Waste Annual Refresher	X	X				X	X	X	X	X	X
RCRA Hazardous Waste Continuing (OTJ) Training	X	X				X	X	X	X	X	X
Explosive Ordnance Safety/ UXO						X	X	X	X	X	X
Quality Professional Training (i.e., ISO 9100)								X			
DOT Hazardous Materials Transportation	X	X						X			

Notes:

1. All personnel who have a role in the disposal of MEC will meet requirements of DDESB TP-18, 1 September 2016.
2. Anyone who generates, handles, transports, treats, stores, or disposes of hazardous waste, including facility operators, technicians, EHS personnel, and people involved with related tasks like recordkeeping, labeling, and waste management oversight must also have RCRA training under 40 CFR 264.16.

3. Any person responsible for packing, shipping, and transporting hazardous materials or hazardous waste will have DOT HAZMAT Training. This is typically the UXOQCS but can be any team member.

RCRA Hazardous Waste Initial Training

Anyone who generates, handles, transports, treats, stores, or disposes of hazardous waste, including facility operators, technicians, EHS personnel, and people involved with related tasks like recordkeeping, labeling, and waste management oversight must also have RCRA training under 40 CFR 264.16. Initial RCRA Hazardous Waste training consists of an approximately 8-hour course with an annual refresher course. This initial training is typically done by an outside environmental training company. An example outline is provided below.

- I. RCRA
 - A. History and background of USEPA and RCRA
 - B. History and background of TDEC and Tennessee Hazardous Waste Management Rules
 - C. Brief background of past waste treatment and disposal practices at MLAAP
- II. OD SOPs
 - A. Personnel Training
 - 1. Introductory RCRA Training
 - 2. Annual classroom refresher
 - 3. Annual on-the-job update
 - B. Record Retention
 - 1. Type of records to be retained
 - 2. Length of retention
 - 3. Location of record retention
 - C. Segregation of Hazardous and Non-Hazardous Waste
 - 1. Propellants, Explosives, & Pyrotechnics (PEP)/ Munitions Components that are safe to move
 - 2. Salvageable scrap
 - 3. Used oils and hydraulic fluids
 - 4. Oil-contaminated articles
 - 5. Dropped or potentially dangerous items / Munitions components too dangerous to move

- D. Waste Codes
 - E. Hazardous Waste Generation, Identification, and Recordkeeping
 - 1. Locations that generate hazardous waste
 - 2. Labeling of containers
 - 3. Inspection of accumulation areas
 - 4. Operating logs
 - 5. Spill kits
 - F. Treatments Process of Propellants, Explosives, & Pyrotechnics (PEPs) / Munitions & Explosives of Concern (MEC)
 - G. Commercial Chemical Products
 - H. Co-Management of Other Materials
 - I. Satellite Collection, In-Process Waste (If applicable)
 - 1. Container labels and markings
 - 2. Container management
 - 3. Special instructions
 - 4. Inspection
 - J. OD Unit
 - K. Hazardous Waste Storage
 - 1. Long-term hazardous waste storage is not on permit
 - 2. Inspection of temporary hazardous waste storage (Central Accumulation Areas/ Satellite Accumulation Areas)
 - L. Contingency Plan for Hazardous Waste Emergencies
 - M. Closure and Post-Closure Plans, Financial Requirements
 - N. Special Solid Waste Generation and Disposal
 - O. Transportation of Hazardous Waste
-

8-Hour Occupational Safety and Health Administration Supervisor/Manager

The 8-hour Occupational Safety and Health Administration (OSHA) Supervisor/Manager course is assigned according to 29 CFR 1910.120. This course must be preceded by 24 to 40 hours of initial training and one to three days field experience. This course is typically provided by an outside safety training company. An example outline is below.

- I. Introduction
- II. Overview of OSHA
 - 1. 29 CFR 1910 General Industry Regulations
 - 2. Written Programs/Plans/Procedures/Training
- III. Inspections/Directives/Instructions
 - 1. OSHA Small Business Inspection Checklists
 - 2. Generic Safety Inspection Checklist
 - 3. OSHA Checklist for General Industry
 - 4. Investigation Checklists
- IV. OSHA Most Recently Cited Violations
 - A. Personal Protection Equipment (PPE)
 - B. Confined Spaces
 - C. Lockout/Tagout
 - D. Hazard Communication
 - E. Means of Egress

24-Hour HAZWOPER

The following is the recommended training outline for the 24-hour First Responder Course and the required 8-hour annual refresher course for 29 CFR 1910.120.

- A. Regulation Overview
- B. OSHA Overview
- 1. Hazard Overview
 - A. Hazard Analysis/Material Safety Data Sheet
 - B. Hazard Communication
 - C. First Responders Assessment

- D. Waiting for Assistance
- 2. Incident Command
 - A. Surveillance, Reconnaissance and Site Safety
 - B. Establishment of Perimeter and Security
 - C. Weather Impacts
 - D. Establishment of Work Zones
 - E. Locating Incident Command and Communications
 - F. Use of Resources and Site Control
 - G. Strategic Goals and Tactical Objectives
 - H. Information Releases
 - I. Containment and Decontamination
- 3. Medical Surveillance
 - A. Monitoring Worker Health and Fitness
 - B. Emergency Treatment and Other Treatment
 - C. Recordkeeping Procedure
- 4. Site Monitoring
 - A. Air Monitoring, Considerations during Response
 - B. Heat and Cold Stress
 - C. Fall Protection
 - D. Other Monitoring
- 5. Personal Protective Equipment
 - A. Levels of Protection
 - B. Waiting for Support
 - C. Selection, Use, and Limitation
 - D. Donning and Doffing Procedures
 - E. Decon and Disposal
- 6. Decontamination
 - A. Personnel and PPE
 - B. Decon of Equipment
 - C. Decon Procedures and Limitations
 - D. Management and Disposal of Decon Waste

- 7. First Response Considerations
 - A. Fire/Explosions
 - B. Spills
 - C. Disasters
 - D. Other Considerations
 - (1) Personnel Injury, Self and Others
 - (2) Confined Spaces
 - (3) Excavations
 - (4) Scaffolding

- 8. First Response to Remediation
 - A. Changing Roles from Responder to Clean-up
 - B. Site Control
 - C. Documentation
 - D. Waste Management Review

40-Hour HAZWOPER

Currently, all HAZWOPER training is provided by a variety of OSHA-recognized training contractors and covers the same topics as the 24-hour HAZWOPER but goes into more depth. The training is conducted in accordance with 29 CFR 1910.120.

8-Hour HAZWOPER Refresher

Currently, HAZWOPER refresher training is provided by a variety of OSHA-recognized training contractors and covers the primary topics as the 24-hour and 40-hour HAZWOPER but goes into less depth. The training is conducted in accordance with 29 CFR 1910.120.

RCRA Hazardous Waste Continuing OTJ

This On-The-Job training is supervisor-led and in-house.

RCRA Hazardous Waste Annual Refresher

This annual refresher covers the same topics as the RCRA hazardous waste initial training in a compressed format.

H-1c(2) Additional Training Programs

Additional training provided to meet job requirements is described below.

Explosive Ordnance Safety / UXO

Training in accordance with DDESB TP-18 by an authorized contractor or through US Army EOD school.

DOT Hazardous Materials Transportation

This is an 8-hour to 16-hour course provided at a minimum of once every three years to ensure compliance with DOT regulations for shipping hazardous materials.

H-1(d) Training Frequency

Personnel complete the RCRA Hazardous Waste Initial Training Program within six months of assignment to the WMA, or within six months of their date of assignment to hazardous waste activities. All employees who are involved in miscellaneous thermal treatment of hazardous waste will not work unsupervised until training is completed.

Re-training and additional information are provided in daily safety meetings. During daily safety meeting, problems which may have arisen are corrected, and additional training may be given related to changes in hazardous waste handling.

Hazardous waste treatment employees will receive documented classroom initial training program refresher courses annually, along with annual documentation of any OTJ received during the year.

H-1(e) Training Techniques

The hazardous waste training program for personnel consists of a combination of in-house classroom, public, ILT, OTJ, CBT, and/or individual instruction as specified by the hazardous waste training director. The individualized training concept ensures that each person receives adequate training relevant to his specific job duties.

H-1(f) Training Coordinator

The overall direction of the hazardous waste training program is the responsibility of the UXOSO. Training for personnel is conducted by the Supervisor or designee, Environmental Office personnel, or qualified training contractors. A list of general qualifications for personnel providing training to onsite OD unit hazardous waste personnel includes:

- Experience, working knowledge and familiarity of hazardous waste storage unit(s)
- Experience, working knowledge and familiarity of wastes generated and OD unit SOPs
- Training and certification in ammunition/explosive disposal/demilitarization operations
Completion of Hazardous Waste TSD Training, 40-Hour HAZWOPER, or basic First Responders Course
- U.S. Army Explosive Safety Course or equivalent
- Safety Orientation

The UXOSO or designee may waive any of the general qualifications listed above in lieu of other appropriate environmental courses, training, and/or experience.

H-2 TRAINING FOR EMERGENCY RESPONSE

Because of the potentially hazardous nature of the waste located in the OD unit, especially waste munitions, personnel assigned to work in those operations are required to follow SOPs in order to minimize the potential for accidents. Because little can be done to counteract a premature ignition of waste PEP or munitions, personnel are trained to evacuate the area immediately and call for assistance in the event of an unplanned or premature ignition. The Emergency Coordinator will implement the Contingency Plan and personnel designated in the plan will respond. The Contingency Plan in Section G relies heavily on the Milan Fire Department for response actions.

H-3 RECORD KEEPING

All training will be documented, signed, and dated by both the person performing the training and the trainee. All training records will be retained for three years after the employee has been reassigned to duties other than hazardous waste. A record of training shall be completed for each person trained in hazardous waste management at the completion of the introductory training, and annually for continuing training.

A copy of all training records will be forwarded to the appropriate Human Resources Office. Training records for current personnel must be kept at the facility until the facility is closed. Training records for former employees must be kept for at least three years from the date the employee last worked at the facility.

SECTION I

CORRECTIVE ACTION/REMEDIATION/CHARACTERIZATION

This section describes the approach to Resource Conservation and Recovery Act (RCRA) corrective measures at MLAAP documented in the Federal Facility Agreement (FFA). The information is submitted in accordance with 40 Code of Federal Regulations 270.14(c)(7) - (8) and TN Rule 0400-12-01-.07(5)(c)(7) – (8).

I-1 FEDERAL FACILITY AGREEMENT TERMS

In 1991, the United States Environmental Protection Agency Region 4, U.S. Department of the Army, and the Tennessee Department of Health and Environment (now TDEC) executed an FFA for MLAAP that documents the agreed approach to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) integration relating to RCRA corrective measures. Article VIII; Statutory Compliance/RCRA-CERCLA Integration of the FFA stipulates, “the Parties intend that activities covered by this Agreement will be deemed to achieve compliance with CERCLA, . . . to satisfy the corrective action requirements of . . . , Section 3004 (u) and 3004(v) . . .” and that “remediation of releases covered by this Agreement shall obviate the need for further corrective action under RCRA (i.e., no further corrective action shall be required).”

In accordance with the terms of the FFA, MLAAP is presenting no RCRA Corrective Measures information (such as sampling and analysis, in accordance with the Waste Analysis Plan or setting boundary conditions based on sampling/remediation requirements in Section C) in this permit application. It is expected that the resulting permit will exclude Corrective Measures requirements inasmuch as all releases are addressed under CERCLA.

I-2 STATUS OF CERCLA ACTION

The Open Detonation units are located within CERCLA Operating Unit #5, for which an Interim Record of Decision was issued September 28, 2004. The “Final Feasibility Study Addendum and Supplemental Remedial Investigation Report” was approved by the United States Environmental Protection Agency in April 2010. The Operating Unit #5 “Final Proposed Plan” was released on October 11, 2010. A final Record of Decision for OU-5 Open Burning Ground Soils was signed July 6, 2011.

CERCLA groundwater monitoring and remedial action at the OBG and OD areas will continue to be conducted in accordance with the MLAAP 2014 Sitewide Groundwater ROD and 2022 Final

Explanation of Significant Difference to the Record of Decision for Site-Wide Groundwater' for Former Milan Army Ammunition Plant that includes the former OBG and ADA in the OU5 WMA.

The 2011 and 2014 RODs and supporting reports and documentation are in the MLAAP Administrative Record File which is available at:

MLAAP Army Environmental Office
MLAAP Building T-116
2280 Highway 104, Suite 1
Milan, Tennessee 38358-3176
(Monday through Thursday, 6:45 a.m. to 5:15 p.m.)

Mildred G. Fields Library
1075-A East Van Hook Street
Milan, Tennessee 38358
(Monday through Friday, 9:00 a.m. to 5:00 p.m., and Saturday 9:00 a.m. to Noon)

SECTION J

CLOSURE AND POST CLOSURE REQUIREMENTS

J-1 CLOSURE PLAN

40 CFR 270.14(b)(13)

TNWMR Rule 0400-12-01.-07(5)(a)(1)(xiii)

This Closure Plan identifies all steps necessary to perform a risk-based closure of the open detonation (OD) unit, the Ammunition Destruction Area (ADA).

Based on the Army's evaluation of future land use— guided by the results of soil sampling and munitions and explosive of concern (MEC) risk assessment— The ADA will be designated for use as a training range by the Tennessee Army National Guard (TNARNG). It is in the best interest of the US Army to continue to use the ADA as a training range because the site is already impacted by munitions and explosives of concern (MEC) and meets the future requirements of the TNARNG.

The pervasive presence of MEC within the ADA from 35+ years of pre- Resource Conservation and Recovery Act (RCRA) activities complicates the successful completion of a RCRA closure at the Ammunition Destruction Area (ADA). Because of the historical use at the ADA prior to RCRA and extensive MEC at the site deposited both prior to RCRA permitted use and during permitted use, it is the intent of the Army to perform a risk-based closure of the shooting pits at the ADA.



**Photo of the Ammunition Destruction Area with
Open Detonation Pits in the Background**

The detonation of munitions has the possibility to release contaminants such as explosives and metals into the soils as well as material potentially presenting an explosive hazard (MPPEH). Closure of the ADA is comprised of two components, an environmental component from the release of contaminants into the environment and a safety component due to possible releases of untreated explosives that continues to present an explosive risk from MPPEH remaining from previous ammunition destruction activities. Successful closure of the site is dependent upon addressing both components.

The open detonation permit requires extensive soil sampling that has been conducted over the life of the permit. Based on historical soil analysis, MLAAP is fairly certain that the site can be closed to an industrial regional screening level (RSL). Subsequent sections of this plan discuss composting or capping of contaminated areas if concentrations exceed industrial RSLs and the background values.

The second component of the RCRA closure of the ADA is the munitions component. As stated earlier, munitions debris (non-explosive remnants from munitions) from pre-RCRA activities are comingled on the site. However, based on permit conditions F.16 on page III-6 and L.1(a) on page III-9, when the

facility was treating waste, the site was policed for unreacted energetics after each treatment and if any were found, they were retreated. These permit conditions were a control measure to verify the complete treatment of the waste munitions. General inspection requirements of the permit require remedial action to be taken immediately when a hazard is identified. A records search from 2012 through 2021 revealed two occasions when miscellaneous munitions were found from policing the ADA following ammunition destruction activities. On both occasions, the munitions were collected and treated. On one other occasion during September 2013, there was a low order shot that did not detonate but burned up in place. After it burned itself out, the shot location was subsequently unearthed to verify the munitions were destroyed.

The property where the permitted area is located has been reassigned to the National Guard Bureau and is licensed for use to the Tennessee Army National Guard (TNARNG). Future use of the site is identified to be used as a training range for detonating munitions. It is understood by MLAAP that an inherent risk of munitions and explosives of concern (MEC) remains at the ADA but based on records, it is not attributed to RCRA waste treatment. Due to controls and procedures put into place for open detonation, releases of MEC from RCRA treatment are very unlikely as compared to pre-RCRA activities.

How much risk from MEC and whether the property is safe for future use as a training range is determined by the US Army Corps of Engineers Munitions Center of Expertise in conjunction with the National Guard Bureau. Cleanup and future use of the site will meet the US Army Technical Center of Explosives Safety (USATCES) and the Department of Defense Explosives Safety Board (DDESB) requirements. These organizations are charged with promulgating and implementing ammunition and explosives safety policy and standards.

Once the range is activated, the National Guard Bureau, as the property owner, is responsible for assessing range safety and determining suitability for future use. The National Guard Bureau may work with other Army and DoD agencies to address range safety and future use determinations.

Waste Management Area History

The Waste Management Area (WMA) is within the area known locally as Area W and includes the Open Burning Ground (OBG) and Ammunition Destruction Area (ADA). Area W has reportedly been in use for destruction and disposal of rejected munitions and explosive-contaminated waste since Milan Army Ammunition Plant (MLAAP) began operations in 1942. The RCRA permit allowed the open burning of pyrotechnics, explosives, and propellants (PEP) to take place in "burn pans" at the OBG. These burn pans were removed in 2022-2023 as part of the closure of the OBG. A revised closure report was submitted to TDEC in May, 2024. Additionally, MLAAP submitted a Class 2 modification request to remove the burning grounds from TNHW-153 in June, 2024. On October 28, 2025, the BG was removed from TNHW-153 through a TDEC Notice of Decision.

Soil and groundwater at Area W are known to be contaminated, likely from the result of bulk explosives reportedly being burned on the ground surface at the OBG. Ordnance items and explosive contaminated wastes were routinely discarded in trenches at the OBG along with ash from the burning of bulk explosives.

At the ADA, munitions and bulk explosives were detonated both underground, and aboveground to a limited extent, for items deemed too dangerous to manage by underground detonation. The ADA portion of Area W became operational in 1947 and consists of a fenced area of approximately 331

acres. Approximately 33 acres are in the immediate area of underground demolition pits. The remaining acreage surrounding the denuded acreage is for stand-off distances for safety arcs utilized for aboveground and belowground detonation of munitions and bulk explosives. Contamination exists at the Area W WMA from pre-RCRA thermal treatment and disposal, both up- and down-gradient of the present OB and OD units.

Regulatory Background

MLAAP was placed on the National Priorities List (NPL) in August 1987. In 1991, the United States Environmental Protection Agency (USEPA) Region 4, U.S. Department of the Army, and Tennessee Department of Health and Environment (now Tennessee Department of Environment and Conservation) (TDEC) executed a Federal Facility Agreement (FFA) for MLAAP that documents the agreed approach to RCRA-Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) integration relating to RCRA corrective measures. Article VIII, Statutory Compliance/RCRA-CERCLA Integration of the FFA stipulates, "the Parties intend that activities covered by this Agreement will be deemed to achieve compliance with CERCLA to satisfy the corrective action requirements of Section 3004(u) and 3004 (v)" and that "remediation of releases covered by this Agreement shall obviate the need for further corrective action under RCRA (i.e., no further corrective action shall be required).

Status of CERCLA Action

The former OB unit (OBG) and the OD unit (ADA) are located within CERCLA Operating Unit (OU) #5 (OU5) Southern Study Area (SSA). Multiple Remedial Investigations (RI) for the OU5 area have been conducted, with the first MLAAP facility wide RI taking place in 1991. The 1991 RI and a feasibility study (FS) conducted at the SSA included the geographic area of the ADA and the Open Burning Ground (OBG). The RI/FS was conducted under the Army Installation Restoration (IR) program in accordance with the Federal Facility Agreement. The scope of the RI/FS was generic in that it included all of the SSA and the ADA/OBG due to possible historical releases of contaminants to the environment. At the time of the RI/FS, the ADA was active and operated under an interim status RCRA permit. Based on the Human Risk assessment (HRA) and Ecological Risk Assessment (ERA) conducted as part of the FS, the current ADA was removed from further evaluation because the site did not exceed applicable or relevant and appropriate requirements (ARARs), did not pose a significant risk to human health or ecological receptors and did not pose a threat to groundwater. (Final Feasibility Study for Operable Unit 5 Southern Study Area Milan Army Ammunition Plant, Harding ESE, June 2001). At the time of the SSA RI/FS, it is unlikely that there was an attempt to delineate the area of the site attributable to pre-RCRA activities.

The 1991 FS provided an overview of the RI findings and summarized the nature and extent of contamination and risks posed by soil/sediment contamination present within the SSA that includes the current ADA. The FS only focused on those soils, sediments, and surface waters that were contaminated at levels that threatened human health and the environment or threatened groundwater.

The characterization summary presented in the 1991 FS states that groundwater contamination was present from nitrocompounds (135TNB, 246TNT, 2A46DT, 4A26DT, HMX, RDX, and Tetraol). And "Past destruction activities have affected subsurface and soil matrices; however, a vast majority of contaminants (nitrocompounds) have either degraded within the environment or leached through the soil column into the regional groundwater (phreatic zone) system." The Characterization Summary also states that the "Current nitrocompounds contamination identified within the near surface may be present due to active leaching of particulate explosives resulting from ruptured or corroded UXO or small quantities of bulk explosives

present in ordnance debris.” Contaminants from nitro bodies and metals cadmium, chromium and lead were identified in the surface water upgradient and downgradient from the site, but below regulatory concentrations. The metals cadmium, chromium, and lead were also detected in sediment downstream of the ADA and above background (Cd, Cr, and Pb at maximum concentrations of 1.68, 16.6 and 22.4 ug/g, respectively).

Based on the RI and subsequent Feasibility Study (FS), an Interim Record of Decision (IROD) was issued for the OBG on September 28, 2004. The OBG underwent closure activities in 2022-2023 and a revised closure report was submitted to TDEC in May, 2024. Additionally, MLAAP submitted a Class 2 modification request to remove the burning grounds from TNHW-153 in June, 2024. The burning grounds were formally removed from TNHW-153 on October 28, 2025. Although the RI included the ADA area, a remedial action was not evaluated in the FS under CERCLA because the site was RCRA permitted. Cleanup of releases from active RCRA sites are not eligible for IR program funding.

Supporting reports and documentation related to the cleanup program are in the MLAAP Administrative Record File which is available online at www.milanaap-ar.com or at the following two locations:

MLAAP Army Environmental Office MLAAP Building T-116
2280 Highway 104, Suite 1
Milan, Tennessee 38358-3176
(Monday through Thursday, 7:00 a.m. to 5:00 p.m.)

Mildred G. Fields Library
1075-A East Van Hook Street
Milan, Tennessee 38358
(Monday through Friday, 9:00 a.m. to 5:00 p.m., and Saturday 9:00 a.m. to Noon)

Closure Plan

MLAAP intends to close the ADA in a manner that:

- Minimizes the need for further maintenance.
- Controls, minimizes, or eliminates- to the extent necessary to protect human health and the environment- post-closure migration of hazardous waste or constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface water or to the atmosphere.
- Complies with requirements of the latest Tennessee’s Hazardous Waste Management Regulations.

Under CERCLA in accordance with the FFA, quantified cleanup goals that are protective of human health and the environment have been established for soil and groundwater at the OU5. Moreover, the OU5 Record of Decision (ROD) prescribes long-term care of the site following successful implementation of the remedy. The cleanup goals and post-closure care measures in this Closure Plan are consistent with those resulting from the CERCLA actions.

The existing contamination within the OU5 and not related to the RCRA permitted OD unit has been thoroughly investigated under CERCLA in accordance with the FFA, quantified cleanup goals that are protective of human health and the environment have been established for soil and groundwater.

Moreover, the OU5 Record of Decision (ROD) prescribes long-term care of the site following successful implementation of the remedy. The cleanup goals and post-closure care measures in this Closure Plan are consistent with those resulting from the CERCLA actions. Cleanup goals and post-closure care measures in the Closure Plan are consistent with those resulting from CERCLA actions in these regards:

- **Soils & Sediments** - In addition to the samples that area planned to be collected, semi-annual soil sampling at the permitted sites verify that there have been no known releases from the OD permitted unit. Based on the closure plan, If RCRA unit has had releases with soil above agreed upon remedial action levels, they will be remediated as necessary to meet RSLs. OU5 Southern Study Area (SSA) CERCLA remedial action goals for COCs are based on RSLs.
- **Groundwater** - Due to historical releases prior to permitting the OBG and ADA, groundwater beneath the site is managed under CERCLA. Just as RCRA corrective action would require a remedy to a health-related standard, the CERCLA remedy requires remedial action to achieve a cleanup objective to a drinking water standard of 2 ppb. Semi-annual groundwater and soil sampling at the RCRA permitted site confirms that there have been no releases from the RCRA units contributing to groundwater contamination.
- **Munitions** – Policing of the ADA after treating munitions confirms that any “kick-out” was collected after OD. Under a CERCLA closure of a munitions response site, future activities on the site are limited according to risk remaining at the site and LUCs implemented as necessary.

Partial Closure Activities

During August 2019, the HQ Joint Munitions Command Commanding General declared MLAAP excess to mission needs and moved the storage mission for explosives to another installation. Since then, government munition storage areas on MLAAP have been cleared. Equipment in production buildings is now being dismantled and removed for transfer or disposal.

The OBG underwent closure activities in 2022-2023 and a revised closure report was submitted to TDEC in May, 2024. Additionally, MLAAP submitted a Class 2 modification request to remove the burning grounds from TNHW-153 in June, 2024. TDEC formally published a Notice of Decision for the closure and removal of the Burning Grounds from permit TNHW-153 on October 28, 2025. ADA closure activities have not yet taken place, but, upon approval of this permit application, ADA closure activities will commence.

Final Closure Activities

Final closure activities will include the following procedures at the Ammunition Destruction Area (ADA).

Table J-1 Final Closure Activities	
Task	ADA Area OD Shooting Pits
Treatment of final inventory of waste	X
Fill in detonation pits	X
Soil characterization Treatment Units around Demolition Pits	X Note 1
Survey Shooting Pit Area for UXO (MEC Assessment)	X Complete – April 5, 2024
Groundwater characterization at the point of compliance (verified by historical semi-annual groundwater monitoring)	X
Treatment of contaminated soil / Implementation of Remedial Actions (as necessary)	X
Re-grading for drainage control	X
Survey (Civil) of Post Closure Conditions	X
Implementation of Land Use Controls	X Note 2

Note 1: Semi-annual soil sampling in accordance with the approved sampling and analysis plan provides evidence that OB/OD permitted treatment has not contributed to contamination within the OD pits.

Note 2: The shooting pits will be filled in and closed to background or risk-based closure in accordance with this plan.

Closure of the ADA will not be a “clean closure” due to the background of the site being in use “pre-RCRA” as a demolition area since 1947. Therefore, the site will be closed with land use controls similarly to the OU5 Open Burning Ground CERCLA site to address potential soil contamination and the MEC safety component. Sampling of the soils at the site will follow a process as indicated under the heading “ADA Closure Sequence”.

When in use, the TNHW-153 RCRA permit required that the shooting pits are sampled twice/year when in use. The permittee conducts soil sampling semi-annual in the open detonation pits in accordance with former permit requirement Sampling and Analysis Plan. Soil sampling conducted in accordance with the plan has verified that the OB/OD operations have not contaminated surrounding soils. Based on sample data going back to prior to when the permit was issued in 2012, concentrations of contaminants have never exceeded industrial soil screening levels and are similar to or less than data dating back to 2002 and earlier.

Soil within the shooting pits is not sampled for multiple reasons. For example, shooting pits are filled in at the end of every operating season. Therefore, soil cannot be characterized within a

shooting pit. Additionally, due to the explosions, dirt within the shooting pits is expelled during explosive shots and thoroughly mixed with other dirt on the site that is then bulldozed back into the pit to “cover” a new explosive shot. This creates a very homogenous mixture of soils at the site. Though shooting pits will be filled in at the time of closure, proposed soil sampling is to a depth of ten feet, similar to the depth of the shooting pits.

Future land use of the site will be managed by the TNARNG. Land use is intended to be for and explosives training range. Land use for ranges is determined by the Department of Defense Explosive Safety Board (DDESB). The DDESB will determine to what extent the land can be used as a range. Based on the sampling analysis and final inspection, land use controls that could be implemented at the site are listed below.

- I. Maintaining LUCs boundary with signage, fence and secured access gate.
- II. Incorporating the LUC boundary and land use restrictions into the installation’s Land Use Control Plan.
- III. Utilizing the Facility Dig Restrictions process to require review/approval and implementation of worker protection practices before any intrusive activities are performed at the Site.
- IV. If a cap or caps are required at the site, posting signs adjacent to caps advising that any excavation activity must be authorized in advance by the responsible environmental department.
- V. Conducting routine inspections in accordance with the inspection schedule to prevent unauthorized access and to ensure the site meets performance specifications in any post closure permit or administrative order.
- VI. In the event any portion of ADA Site is transferred, the requirements of Tennessee Code Annotated (TCA) §-68-212-225 will be followed.

ADA Soils Closure Sequence

1. Confirmatory Sampling
 - a. Collect soil samples in accordance with sampling plan. Compare analysis results to USEPA Industrial or Residential Soil Regional Screening Levels (RSLs)¹ and the Milan-specific background screening value for arsenic, per permit modification dated 01/17/2024.
 - i. ADA: If COC’s are less than Industrial RSLs or arsenic values, then no further sampling. Proceed to Step 3.b. If COC’s exceed RSLs, then proceed to Step 2.
 2. Corrective Measures Study
 - a. If greater than Industrial Soil RSLs, then
 - i. Run Synthetic Precipitation Leaching Procedure (SPLP) on samples to determine if MCL’s are exceeded for COC’s.
 - ii. Compare SPLP results to COC MCL’s. If less than MCL’s, then no further action. Site is within LUC area. Proceed to Step 4.
 - iii. Compare SPLP results to COC MCL’s. If greater than MCL’s, then further action is required. Conduct sampling to delineate area. Proceed to Step 3.
 3. Design
-

- a. If further action is required in accordance with Steps 2.a.iii, provide a corrective action plan (risk assessment, design and workplan) to TDEC to address the contaminated area.
- b. The ADA will be surveyed (civil) and to document closure activities and areas of significant MEC or MC significance.

4. Corrective Measure Implementation

- a. Implement remedy as necessary (construction and operations).

5. Long-Term Management

- a. Implement long-term management (LTM) after remedial action objectives have been met.

¹ RSLs will be used as clean criteria for all soil analytes except for arsenic. The screening level for total arsenic will be 10.06 mg/kg, per modification dated 01/17/2024.

Treatment of Final Inventory of Waste

The maximum permitted volume of waste to be disposed of at the at the WMA is 10,000 pounds net explosive weight (NEW) per day.

The last and final inventory of explosive waste treated at the ADA will likely occur near the end of closure activities.

Soil Characterization within the Waste Management Area

In as much as the CERCLA soil remedy has been implemented at the OBG, this Closure Plan focuses specifically on the soil in the immediate area of the ADA shooting pits. The soil-sampling scheme will include both biased and unbiased components. Based on the OU5 ROD conclusion, the entire first round of samples will be collected from the upper 2 feet of soil, except for the areas surrounding the OD shooting pits where soil has been impacted at greater depths.

The soil cleanup goals (See Soil Constituents of Concern List) in this Closure Plan are consistent with the ROD for soil remediation at OU5 under CERCLA actions at MLAAP for these reasons:

- The parties to the MLAAP Federal Facility Agreement (FFA) agreed that remedial actions under CERCLA would satisfy the corrective action requirements of RCRA.
- The OU5 ROD reflects the results of a CERCLA-compliant Remedial Investigation/Feasibility Study (RI/FS), which established risk-based soil cleanup goals. These goals are based on USEPA Regional Screening Levels (RSLs).
- The remedial actions which were implemented in accordance with the OU5 ROD have been completed and soil in OU5 Burning Ground area has been remediated to those goals.

Soil characterization for OD RCRA closure will include a modified list of COCs that were identified in the 1999 OU5 Remedial Investigation Report (Final) and the former TDEC Rule 1200-1-7-04 Appendix 1 inorganics list. Soil analysis will utilize the latest methods in the USEPA SW846 Test Methods for Analyzing Solid Waste.

The OU5 soils remedy contains the following information that is applicable to this Closure Plan.

- Explosives and metals are the COCs for soil. The explosives TNT and RDX contribute most

of the cancer risk and hazard indices for all receptors and subareas of OU5.

- Soil containing RDX above 10 milligram per kilogram (mg/kg) or TNT above 25 mg/kg were established as action levels in the OU5 ROD to meet RSLs. (Those thresholds were based on a CERCLA RI risk assessment using published toxicity levels. Under CERCLA, those levels are reviewed every five years. Based upon the CY2020 CERCLA Five Year Review for OU5, RSLs for TNT and RDX have changed, but remain within USEPA's protective cancer risk range. See figure "Excerpt from CY2020 CERCLA Five Year Review OU5 Southern Study Area from CY2020 Fifth CERCLA Five Year Review".
- Munitions debris and the potential of unexploded ordnance (UXO) are present across the area especially at the ADA.
- Remedial goals can be achieved through in situ remediation, ex situ remediation and/or capping and land use controls. In the CERCLA remedy for the Burning Ground, capping was selected as the preferred method of remediation for explosive contaminants at the OBG due to UXO and asbestos (no asbestos is present at the ADA).

Soils exceeding the industrial RSLs will be analyzed with the synthetic precipitation leachate procedure (SPLP) to determine if leachate exceeds the MCL for a given COC. If the industrial RSL's for COC's are exceeded or the MCL for a given COC is exceeded, the extent of contamination will be determined and a corrective action workplan provided to the TDEC for review and approval. The extent of contamination will be defined when analytical results quantitatively identify soils beyond the excavation vertically and horizontally that do not contain COC's above the established industrial RSLs. Once areas of contamination are delineated, the approach to treatment/disposal of soil within each area will be addressed individually.

Excerpt from CY2020 CERCLA Five Year Review OU5 Southern Study Area

7.4.2.3 Changes in Toxicity and Other Contaminant Characteristics

Toxicity characteristics for RDX have been revised due to a 30 August 2018 IRIS update. The slope factor was changed to a value of 0.08 mg/kg-day⁻¹ versus the value in the ROD of 0.11 mg/kg-day⁻¹ (Table 7-1). The current residential RSL for RDX is 8.3 mg/kg, which is lower than the risk-based values presented in the ROD (10 mg/kg). However, the ROD value of 10 mg/kg is within USEPA's protective cancer risk range (8.3 mg/kg to 8,300 mg/kg) and below the noncancer RSL of 300 mg/kg.

Table 7-1. OU5 Soil ROD Remediation Goals and Risk-Based Concentrations for COCs.

Soil COC	ROD RG	2009 RSL	2013 RSL	2019 RSL		Chronic Reference Dose		Cancer Slope Factor	
Analyte	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg-day)		(mg/kg-day) ⁻¹	
				Residential	Industrial	2013	2019	2013	2019
RDX	10	5.5	5.6	8.3	38	3.0E-03	4.0E-03	1.1E-01	8.0E-02
TNT	25	19	3.6	21	96	4.0E-04	5.0E-04	3.0E-02	3.0E-02

COC = Contaminant of Concern
RG = Remediation Goal
mg/kg = milligram per kilogram

ROD = Record of Decision
RSL = Regional Screening Level
mg/kg/day = milligrams per kilogram per day

The current residential RSL for TNT is 21 mg/kg, which is lower than the RG presented in the ROD (25 mg/kg). However, the ROD value of 25 mg/kg is within the USEPA's protective cancer risk range (21 to 2,100 mg/kg) and below the noncancer RSL of 36 mg/kg. Therefore, the change in toxicity values does not affect the remedy protectiveness.

Table J-2: Soil and Groundwater Constituents of Concern List

USEPA Regional Screening Levels Summary Table (Nov 2024) (TR=1E-06, HQ=1)		
Metals	Industrial Soil (mg/kg)	Groundwater MCL (ug/L)
Arsenic Inorganic*	10.06*	1.0E+01
Barium	2.2E +05	2.0E+03
Cadmium (Diet)	1.0E+02	NA
Cadmium (Water)	NA	5.0E+00
Chromium III Insoluble Salts	1.8E+06	NA
Chromium (Total)	NA	1.0E+02
Lead and Compounds	8.0E+02	1.0E+01
Mercury Salts (Mercuric Chloride and other mercury salts)	3.5E+02	NA
Mercury (Elemental)	NA	2.0E+00
Selenium	5.8E+03	5.0E+01
Silver	5.8E+03	No MCL Established
Aluminum	1.1E+06	No MCL Established
Antimony (Metallic)	4.7E+02	6.0E+00
Cobalt	3.5E+02	No MCL Established
Copper	4.7E+04	1.3E+03
Manganese (Non-diet)	2.6E+04	No MCL Established
Nickel Soluble Salts	1.7E+04	No MCL Established
Thallium Soluble Salts	1.2E+01	2.0E+00
Vanadium and Compounds	5.8E+03	No MCL Established
Zinc and Compounds	3.5E+05	No MCL Established
Fluoride	4.7E+04	NA
Explosives		Revised ESD Cleanup Levels for Site-Wide Groundwater, July 2022 (ug/L)
HMX (Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine)	5.7E+04	Not listed as a COC
RDX (Hexahydro-1,3,5-trinitro-1,3,5-triazine)	3.8E+01	2.0
Trinitrotoluene (2,4,6-TNT)	9.6+01	2.0
2-amino-4,6-dinitrotoluene	1.1E+02	1.9
4-amino-2,6-dinitrotoluene	1.1E+02	1.9
2,4-dinitrotoluene	7.4E+00	0.24
2,6-dinitrotoluene	1.5E+00	0.049
1,3-dinitrobenzene	8.2E+01	2.0
2-nitrotoluene (CAS No. 88-72-2)	1.5E+01	0.31
Nitroglycerine	8.2E+01	0.14
Tetryl (Trinitrophenylmethylnitramine)	2.3E+03	NA
Other		
Nitrate	1.9E+06	1.0E+04
Perchlorate and Perchlorate Salts	5.5E+01	1.5E+01(G)

Note 1: The threshold for COCs will be the Industrial Regional Screening Levels (RSLs) prevailing at the time of closure.

*=The screening level for total arsenic will be 10.06mg/kg, per Class 1 Permit Modification dated 04/08/2024.

Note 2: Revised ESD Cleanup Levels are being used for Explosive COCs in groundwater as MCLs have not been established for these constituents. The Sitewide groundwater remediation program's cleanup levels were revised in 2022 through the 'Final Explanation of Significant Difference to the Record of Decision for Site-Wide Groundwater' for Former Milan Army Ammunition Plant.

Background Sampling

Due to the use of the ADA for disposal of munitions for approximately 75 years, it is not feasible to remove all munitions debris. The ADA was used as a munitions disposal area for over 35 years prior to the use of ADA as a RCRA permitted site. The extent of metal debris on the ground extends well beyond the area of impact from the permitted open detonation pits.

For soil characterization purposes, the USEPA risk based Regional Screening Levels (RSLs) will be used to determine the final closure status of the ADA. Due to natural variations in concentrations of Arsenic in West Tennessee, the MLAAP background levels established in the 1991 Fluor Daniel RI of 10.06 mg/Kg will be used in lieu of RSLs.



Photo of Ubiquitous Amounts of Metal on the Ground at the Ammunition Destruction Area

Biased Sampling

Soil samples will be collected at locations that are most likely to be impacted by releases from the OD unit.

OD Unit

After the final “shot(s)”, the detonation pits were filled in with the surrounding soil. Soil will be mounded to prevent stormwater from collecting in the area. The soil will be compacted as the shooting pit is filled. The local area around the shooting pits will be policed, graded, and then hydroseeded to prevent erosion.

Prior to sampling at the OD Unit, pedestrian walkways and equipment access routes will be policed to pick up all materials potentially presenting an explosive hazard (MPPEH). IAW DoD Instruction (DoDI) 4140.62 and DoD Manual 4140.72, recovered MPPEH items will be visually inspected for the presence of explosive or other hazardous material and certified as either material documented as safe (MDAS) or material documented as an explosive hazard (MDEH). If MDEH is encountered, site management will be notified, and the item will be moved if deemed safe or will be BIP (Blown-In-Place). The documentation of MDAS requires two independent signatures by trained and certified personnel. Lockable containers will be utilized for MDAS storage. MDAS documentation is certified and signed site management and certified MDAS will be secured until released for disposal. US Defense Department (DD) Form 1348-1A will be completed IAW DoDI 4140.01 and EM 385-1-97.

The permitted open shooting pits at the OD Unit resemble an inverted cone in the ground, normally 10 to 15 feet deep. The former operations at the shooting pits affect the sampling pattern in their immediate vicinity, specifically:

- Prior to each shot, the pit was backfilled with soil above the waste ordnance to ground surface with soil graded from the surrounding area

- Each shot ejects the overburden from above the ordnance which then falls back to the ground surrounding that pit
- Repeated shots result in the gradual movement of the shooting pits
- Pits were routinely backfilled to prevent the accumulation of storm water
- Less than 10 pits are typically open at any given time
- Backfilled pits were dug out prior to a new shot

To account for the movement of the pits and to characterize the soil disturbed by the shots, the following sampling plan will be implemented:

- Prior to sampling, any open pits will be backfilled with surrounding soil as they would during normal operations.
- Two rectangular grids, one along each line of former shooting pits, will be established, each with these dimensions:

Each 25-foot interval grid will extend 25 feet beyond the last pit at each end of the line (approximately 1,000 feet) and 25 feet on either side of each node along that center line. A sampling point will be located at each grid node.

A composite sample will be collected at each sampling point, comprised of grab samples from these depths:

- 0 to 2 feet bgl
- 4 to 6 feet bgl
- 8 to 10 feet bgl

Not including QA/QC samples, approximately 123 samples will be collected from the disturbed soils in the immediate vicinity of the shooting pits on each set of shooting pits.

- Three from each of the three silt/sedimentation basins at the OD Unit: one at the mouth of the drainage ditch entering each pond, one adjacent to the discharge structure, and one midway between those, composited for one analysis (one three-point composite sample for each silt/sedimentation basin, for a total of three separate three-point composite samples)
- Three from the ditch downstream of each silt/sedimentation basin discharge structure outfall, one at the bottom and one from each embankment within 20 feet of the outfall, composited for one analysis (one three-point composite sample associated with each silt/sedimentation basin, for a total of three separate three-point composite samples)

Unbiased Sampling

These surface soil samples will be collected to assess any generalized contamination from fallout from emissions from either the former OB or OD units. The unbiased samples will complement the 157 samples generated by the biased sampling pattern. The unbiased sampling approach will be:

- Establish a 200-foot grid over the entire WMA, and number each grid node

- Select 50 nodes for sampling using random numbers (to avoid duplication, no node within 100 feet of a biased sampling location will be included in the unbiased sample population)
- Collect a composite sample from each selected node, comprised of five grab samples: one at the node and one along each grid line at a distance of 50 feet from the node

Follow-Up Sampling

If any composite sample from the original (biased or unbiased) sampling program contains explosives or metals above risk-based thresholds, additional sampling will be performed to identify the extent of contamination, as follows.

- **Surface Soil:** At the location of each contaminated composite sample, a new grid, extending 100 feet from the original grid node, will be established, and samples will be collected at every node, and at each of the original sampling points. This pattern will extend beyond the original sampling pattern in all directions. At each location, samples will be collected at 0 to 2 feet and 2 to 4 feet bgl, and each of the resulting 26 grab samples will be analyzed individually to define the extent of localized contamination.
- **Silt/Sedimentation Basins:** A 20-foot grid will be established over the sediment in the basins. All grid nodes falling within the embankments will be numbered and samples will be collected at the original locations and at eight additional random locations from 0 to 2 and 2 to 4-foot depths. Each grab sample will be analyzed individually to define the extent of contamination within the basins.
- **Ditch Sediment:** Three new grab samples will be collected at the original location in addition to 20 and 50 feet downstream of the original location at depths of 0 to 2 and 2 to 4 feet bgl. Each grab sample will be analyzed individually to define the extent of contamination within the drainage pattern.
- **Shooting Pit Areas:** At grid locations where contamination is identified, a second round of horizontal and vertical samples will be collected where adjacent samples do not define the extent of contamination:

Horizontal: An additional soil sample will be collected 25 feet outside the location of any "hot" sample(s) on an outer node of the original grid, one immediately beyond that node and the adjacent nodes on either side.

Vertical: One composite sample comprised of grab samples from depths of 12 to 14 feet bgl and 16 to 18 feet bgl.

Should the follow-up sampling at any area fail to define the extent of soil contamination, additional sampling events will be performed, each successively expanding the sampling network (horizontally and/or vertically) beyond locations still reporting excessive RDX/TNT concentrations, until the outermost samples are below the threshold concentrations. In accordance with TNHW-153's sampling plan, semi-annual soil sampling around the OD unit ensured that releases were not taking place and adding to preexisting soil and groundwater contamination that is being addressed under CERCLA.

Groundwater Characterization at the Point of Compliance

A detection monitoring program for groundwater monitoring at both the OBG and the ADA is conducted as required under TN Rule 0400-12-01.06 (6)(h) and 40 CFR 264.97. Groundwater at the WMA is sampled semi-annually in accordance with the "MLAAP Sampling and Analysis Plan for RCRA Waste Management Area" (RCRA Permit Attachment 9).

The RCRA groundwater sampling program was first established in 1995. First year background sampling at the WMA was conducted in 1995 to establish baseline monitoring data. Four (4) consecutive quarterly sampling events were performed. All parameters were analyzed in quadruplicate to provide a statistical database to which all future data could be compared. Current parameters include the USEPA Method 8330 suite for explosives and Perchlorate. Since that time, all groundwater monitoring has been conducted on a semi-annual basis. Annual groundwater monitoring reports are submitted to the TDEC Division of Solid Waste each year. When the OB/OD was actively treating wastes, annual soil monitoring reports were submitted to the TDEC Division of Solid Waste each year in accordance with TNHW-153.

Establishment of a groundwater monitoring system was difficult at best because the WMA had been used previously to the permit as a treatment and disposal site for waste military munitions. Basically, the groundwater monitoring system serves to determine if the miscellaneous thermal treatment processes that took place during the site's RCRA-permitted period have contributed to groundwater contamination since the first year, background monitoring done in 1995.

Since 1995, the number of wells monitored as well as the number of contaminants monitored has changed over time. Both the number of monitoring wells and the number of contaminants monitored has been reduced as statistical trends have verified that certain contaminants originally monitored have not been in the waste stream being treated and have not been introduced into the environment. Some monitoring wells have been removed from the sampling regime because they were redundant to the program or had to be replaced due to ineffectiveness. Upgradient monitoring well MI-019 at the ADA was damaged and was replaced with MI-019B in 2007.

A comparison of 1995 explosives background data with current 2024 data reveals in groundwater at upgradient and downgradient wells are now below background except for monitoring well MI-296 and MI-250.. Statistical Evaluations of current data relative to the background are provided in annual groundwater monitoring reports. The 2024 groundwater monitoring report shows that all wells displayed no trends, stable, or decreasing trends in RDX and TNT concentrations with the exception of MI-263, displaying a "probably increasing" trend and MI-296 and MI-250 displaying an "increasing" trend. Thiel-Sen analyses were conducted and did not show any significant trends at this time.

Open Burning Ground

	Well MI-259		Well MI-252		Well MI-250	
	Upgradient		Downgradient		Downgradient	
	1995 Background mean concentration	June 2024	1995 Background mean concentration	June 2024	1995 Background mean concentration	June 2024
Total Nitrobenzenes (ug/L)	593.5	78.71	93.0	16.84	915.6	2170.60

Ammunition Destruction Area

	Well MI-019B		Well MI-296		Well MI-263	
	Upgradient		Downgradient		Downgradient	
	1995 Background mean concentration	June 2024	1995 Background mean concentration	June 2024	1995 Background mean concentration	June 2024
Total Nitrobenzenes (ug/L)	10	0.256	52	319.03	20.3	1.10

In the annual groundwater monitoring reports, statistical evaluation of well data is performed using intra-well data of the groundwater monitoring analytical data. Separate analyses, using the Mann-Kendall statistical method, is performed for the two (2) main constituents of concern (RDX and TNT). The Mann-Kendall statistical test and/or the seasonal Mann-Kendall method are used to determine if a statistically significant upward trend in groundwater concentrations had or is occurring. The seasonal Mann-Kendall is detailed in EPA 530/R-09-007, "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance March 2009," can be found at:

www.epa.gov/osw/hazard/correctiveaction/resources/guidance/sitechar/gwstats/unified-guid.pdf.

Based on the 2024 Annual Groundwater Report submitted to TDEC, the analytical data and trend analysis using historical data indicates the permitted RCRA activities at OBG and ADA have had no impact on groundwater conditions at this site. The Mann-Kendall method is used to determine trend analysis for all wells, based on RDX and TNT concentrations detected from 2007 to 2024, a total of 18-years.

By implementing the groundwater quality detection monitoring-program described in "MLAAP Sampling and Analysis Plan for RCRA Waste Management Area" (TNHW-153 RCRA Permit Attachment 9), any groundwater quality degradation has been detected in real time, thereby eliminating the need for closure- specific measures to assess groundwater quality.

CERCLA groundwater monitoring and remedial action at the OBG and OD areas will continue to be conducted in accordance with the MLAAP 2014 Sitewide Groundwater ROD and 2022 Final Explanation of Significant Difference to the Record of Decision for Site-Wide Groundwater' for Former Milan Army Ammunition Plant that includes the former OBG and ADA in the OU5 WMA. On an annual basis, the

Tier 1 team comprised of the USEPA, TDEC Division of Remediation and the Army make decision to ensure that groundwater treatment on MLAAP meets the remedial action objectives outlined in the 2014 Sitewide Groundwater ROD and the 2022 Final ESD to the ROD for Sitewide Groundwater. Remedial Action Objectives of the SWGW ROD and the ESD to the ROD applicable at the OBG and ADA areas include the following objectives.

- Restore groundwater quality, wherever practicable consistent with the NCP expectation, throughout the site plumes to meet cleanup levels for COCs (including the health advisory standard of 2 parts per billion [for RDX) based upon the classification of the aquifer as a drinking water source (i.e., General use) by the Tennessee Water Quality Control Act and TDEC water quality criteria regulations.
- Prevent and/or minimize further migration of the contaminated groundwater plumes at the MLAAP.
- Protect receptors from exposure to groundwater containing COCs at concentrations above acceptable risk-based cleanup levels.

Below is a reference table of the revised cleanup levels for site-wide groundwater from the 2022 Final ESD to the ROD for Site-Wide Groundwater' for Former Milan Army Ammunition Plant:

Explosives	Revised ESD Cleanup Levels for Site-Wide Groundwater, July 2022 (ug/L)
RDX (Hexahydro-1,3,5-trinitro-1,3,5-triazine)	2.0
Trinitrotoluene (2,4,6-TNT)	2.0
2-amino-4,6-dinitrotoluene	1.9
4-amino-2,6-dinitrotoluene	1.9
2,4-dinitrotoluene	0.24
2,6-dinitrotoluene	0.049
1,3-dinitrobenzene	2.0
2-nitrotoluene (CAS No. 88-72-2)	0.31
Nitroglycerine	0.14

While the groundwater at the ADA is being monitored under TNHW-153, once closure activities cease, the necessary remedial actions pertaining to groundwater will be conducted through the MLAAP sitewide CERCLA groundwater remediation program—not through RCRA. As such, meeting the aforementioned groundwater cleanup levels will not be necessary for this RCRA permit's closure.

Treatment of Contaminated Soil

The necessity for treatment of soil will depend on the outcome of the soil characterization and the presence of risk due to MEC. Should the first round of sampling identify no COC concentrations exceeding the industrial RSLs, no soil treatment will be performed. The WMA permitted units will be prepared for post-closure care, as described in this section.

Should the first round of sampling identify contaminated soils, follow-up sampling will be conducted to define the extent of contamination. Soils exceeding the industrial RSLs will be analyzed with the synthetic precipitation leachate procedure (SPLP) to determine if leachate exceeds the MCL for a given COC. If the MCL for a given COC is exceeded or industrial RSL's* for COC's are exceeded, the extent of contamination will be determined and a corrective action workplan provided to TDEC for review and

approval. The extent of contamination will be defined when analytical results quantitatively identify soils beyond the excavation vertically and horizontally that do not contain COC's above the established industrial RSLs. Once areas of contamination are delineated, the approach to treatment/disposal of soil within each area will be addressed individually. The treatment/disposal approach for each area will depend on the COC, the volume of soil within the contaminated area, the cumulative volume of contaminated soil within the WMA, proven cleanup technologies available at the time of closure, and costs. The optimum set of remedial technologies for soil treatment/disposal (e.g., in-situ and/or ex-situ) will be negotiated between the U.S. Army and TDEC. Capping and land use controls are likely candidate technologies that were evaluated in the CERCLA Feasibility Study (FS), and each is described in this Closure Plan. Other technologies may be proposed following the characterization of the WMA soils.

Each alternative approach will require excavation/grading where UXO may be encountered. Therefore, whenever soil excavation or grading is underway, –UXO qualified personnel will be present throughout any excavation/grading operations. Waste munitions discovered during excavation will qualify and be managed as a munitions emergency as defined by Tennessee Rule 0400-11-01-.02(2)(a). UXO qualified personnel will manage any identified explosive risks and handle or destroy the munitions onsite. If, at the time of closure, onsite personnel or contracted personnel are not available, EOD personnel will be summoned from Fort Campbell Kentucky, to handle the emergency.

Any MPPEH encountered will be evaluated by UXO qualified personnel. Waste munitions discovered that do not meet the requirements of a munitions emergency will be placed into DOT- approved containers, transported to a DDESB approved storage area and stored in accordance with the munitions rule. If deemed necessary by qualified UXO personnel, the collected MPPEH will be treated to remove explosive risk or may be shipped to an appropriate offsite facility. Metal that is determined to be safe will be recycled.

Excavation and Disposal

This approach will most likely be applied to limited areas of soil contamination. Personnel meeting OSHA 1910.120 standards will excavate the soils in the designated localized area(s). Soils will be excavated using remote-operated backhoes, trackhoes, or other earthmoving equipment, as required. Excavated soil will be containerized (typically in lined 20-cubic-yard roll-off boxes or directly into lined tractor/trailers) for transport to a permitted facility, if necessary. Excavation will continue until reaching the limits designated by the profile, at which point confirmation samples will be collected. One composite sample will be collected for each 100 square feet of excavation. Each composite sample will be comprised of one grab sample from each quadrant of the square. Soil samples will be analyzed according to the Sampling and Analysis Plan.

If the analytical results indicate that COC's are below established risk-based cleanup levels*, the excavation will be backfilled with clean native soil. The filled excavation will be compacted using the tracks of the backfill equipment and contoured to reduce or eliminate run- on and run-off along with the application of hydro-seed to establish vegetative cover.

If confirmation sampling indicates COC concentrations remain above established risk-based cleanup levels*, excavation and confirmation sampling will continue until COC concentrations are acceptable. Over-excavated soil will be managed in the same manner as the excavated soil outlined above.

*= RSLs will be used as clean criteria for all soil analytes except for arsenic. The screening level for total arsenic will be 10.06 mg/kg, per modification dated 01/17/2024.

Onsite Composting

In the September 2004 OU5 Soils ROD, onsite ex-situ composting was identified as the preferred remedy for any OU5 soils, based on the results of the CERCLA RI/FS. Successful composting of contaminated soils has been performed at MLAAP for the OU3/4 soils. However, the 2004 excavation/ex-situ remedy for OU5 soils could not be performed due to the discovery of isolated pieces of asbestos at OBG comingled with UXO during field activities that began in April 2007. As a result, remedial alternatives were re-evaluated and a new remedy consisting of containment, vegetative cover, and land use controls were retained as the preferred alternative for OU5 BG Soils remediation.

Inasmuch as the RI/FS determined that composting was viable for onsite treatment of soil from OU5, that technology will be considered for treatment of WMA soils at closure. The current MLAAP composting facility is no longer operational; therefore, a temporary, single-purpose composting unit would be constructed within the WMA, should that technology be selected. Any proposal for composting including the design and operation of the composting unit will be provided to DSWM for review and concurrence.

The location and size of any composting unit within the WMA will be determined after delineating contaminated soil areas and determining the volume of soil to be treated. Criteria that will influence the location of the unit include its proximity to areas of MPPEH, soil contamination, access by off-road haul vehicles, and surface drainage.

The excavation of contaminated soil to be treated by composting will follow the same approach as the excavation/offsite disposal alternative described above, with transport of the soil by off-road vehicles. The specific design and operation of the composting unit will be determined at the time of closure.

Capping

The soil characterization may indicate that closure in place with an engineered cap will be the most cost-effective technology. Should in-place closure of an area be implemented, typical engineered caps will have the following elements:

- The entire contaminated area will be contoured to reduce and control run-on and run-off and
- The contaminated area will be compacted using earthmoving equipment.

During the contouring process, any metal objects, shreds, and/or parts encountered will be removed from the surface of the soil. After contouring and compaction, a 3- foot wide by 4-foot-deep anchor trench will be excavated around the entire area. Soil from the excavation will be stockpiled adjacent to the outside of the excavated trench. Specific design requirements and construction will be based upon the most recent available techniques and will be negotiated with TDEC at the time of closure and will meet minimum liner and cover requirements and CQA requirements per TN Rule 0400-12-.06(2)(j) and 40 CFR 264.19.

An engineered liner will be placed over the entire area and welded together to form a continuous

barrier. The liner will be quality control- (QC) checked in accordance with engineering specifications to ensure the integrity of the seam and for leaks. Any leaks and/or tears will be repaired and QC checks performed on those areas. The edges of the liner will be folded into the anchor trench around the entire area. Soils excavated from the trench will be placed between the folds of the liner in the trench to provide the anchor. After anchoring the liner, the area will be capped with a minimum of 2 feet of clean native soil.

The cover will be placed on the liner/fabric before any traffic is allowed on the surface. The cover soils will be placed on the liner/fabric in 6-inch lifts and compacted using the tracks of the spreading equipment. The earthen cover will be contoured to eliminate pockets of standing water, control run-off, and minimize run-on. After the earthen cover is completed, the entire covered area will be fertilized and sowed with a native seed mix. After fertilization and sowing, the site will be monitored to ensure good germination and establishment of cover.

Decontamination Pad

Equipment decontamination will be required for each proposed soil treatment alternative. A decontamination pad will be constructed to clean and decontaminate all equipment used onsite. The decontamination pad will be sized to accommodate any earthmoving equipment used for closure, and a berm will be constructed on three sides. The pad will be sloped to one corner and will be dewatered as necessary into a portable water wagon or tanker truck.

Wastewater, sludge, and solids removed from the decontamination pad will be sampled and analyzed for COC's. Decontamination wastewater will be treated onsite in portable activated carbon treatment units, treated at a MLAAP activated carbon groundwater treatment facility, or shipped offsite for treatment and disposal. Sludges and solids containing COC concentrations above threshold levels will be treated onsite or managed as waste for offsite disposal. All equipment used in the closure will be pressure-washed and triple-rinsed using the facility's potable water supply. Once equipment decontamination is completed and wastewater sludge, and solids are removed, the HDPE liner will be removed from the decontamination pad and containerized for disposal.

Re-Grading for Drainage Control

Following the implementation closure plan and any remedy, the denuded portions of the WMA will be finish-graded to manage surface water drainage. The finished grade will be tied into any vegetated areas that were backfilled during the soil treatment actions. Naturally vegetated areas will be disturbed as little as possible. Those graded areas will then be fertilized with the appropriate fertilizer mix and sown with native grass mix.

Description of Closure Schedule

The closure process for MLAAP's WMA began in 2021 when MLAAP submitted a Notice of Intent to close its RCRA permits in a class ¹1 modification request to TDEC.

Within 90 days after receiving the final volume of hazardous waste, MLAAP will treat and/or remove from the OD unit all hazardous waste in accordance with the approved Closure Plan. MLAAP will notify the USEPA Regional Administrator and TDEC Commissioner at least 45 days prior to the date final closure is expected to begin. **This permit application will serve as notification that closure activities is expected to begin upon approval of the permit application.**

Table J-3 demonstrates that closure of the MLAAP WMA within 180 days is not feasible even if activities are fast-tracked and soil treatment is not required. Should a soil remedy be required, a normal performance schedule would result in a closure duration of over 1220 days. Even on a fast-track schedule, closure with soil treatment would require 1100 days to complete closure. Closure activities of the MLAAP Burning Pans is complete. The closure of the ADA has been dependent upon availability of funding. Closure of the ADA is currently funded and under contract. Should a soil remedy be required, a normal performance schedule would result in an extended closure duration. Therefore prior to commencement of closure, MLAAP will request an extension to accommodate proper closure of the WMA proposed in this Closure Plan.

Upon completion of closure, in accordance with TN Rule 0400-12-01-.06(7)(f), MLAAP will submit to the Regional Administrator and the TDEC Commissioner a certification by an independent Tennessee Registered Professional Engineer that the facility has been closed in accordance with the specifications in the approved Closure Plan.

Munitions and Explosives of Concern Assessment of the ADA

Due to the ADA site being utilized as an open detonation area where there is a risk of munitions and explosives of concern (MEC) both from pre-RCRA activities as well as RCRA treatment, the site will be assessed to identify potential MPPEH/MEC. Assessment of the site will be focused on the shooting pits and limited to areas utilized for RCRA treatment. This MEC Assessment will include data collection concurrent with planned closure activities (e.g., surface and subsurface clearances, sampling, grading). The need for any additional assessment or digital geophysical mapping within the wider area of the ADA for explosives safety will be determined by the Army. If the Army determines digital geophysical mapping is needed, intrusive investigation of select subsurface anomalies would be conducted. The outcome of the data collected from the MEC Assessment will present data to support decisions regarding explosive safety, the site's future training suitability, and whether further remedial action is required to protect potential human and ecological receptors against direct exposure to MEC at the ADA.

Closure Plan Retention/Notification

MLAAP will maintain a copy of the approved closure plan onsite at the Army Environmental or contractor EHS Manager's office, and all revisions to the plan until the certification of closure completeness has been submitted and accepted by TDEC. If changes in operation or facility design affect the Closure Plan, it will be amended. It will also be amended if there is a change in the expected year of closure. Modification requests, if required, will be made within 60 days after the change in operation or design occurs.

J-2 Post Closure Plan

After closure of the ADA shooting pits, based upon the results of the soils investigation and the approval of the DDESB, the property will be utilized as a training range for the Tennessee Army National Guard.

If necessary, delay of closure (frequently referred to as an administrative closure) may be utilized as a temporary deferral of specific closure activities.

It is the intent of the Army that a post-closure permit imposes the requirements in §265.121

(§270.1(c)(7)) be utilized as a post closure care mechanism for the ADA area. After closure of the ADA shooting pits and based upon the results of the soils investigation and the MEC assessment, the property will be utilized as a training range for the Tennessee Army National Guard (TNARNG).

In accordance with the OU5 ROD, the Army has implemented land use controls restricting the OBG site from residential use or public access due to the presence of munitions debris and UXO. It is the intent of the MLAAP that the ADA will have similar permanent land use controls restricting the site from residential use or public access due to the presence of munitions debris and UXO.

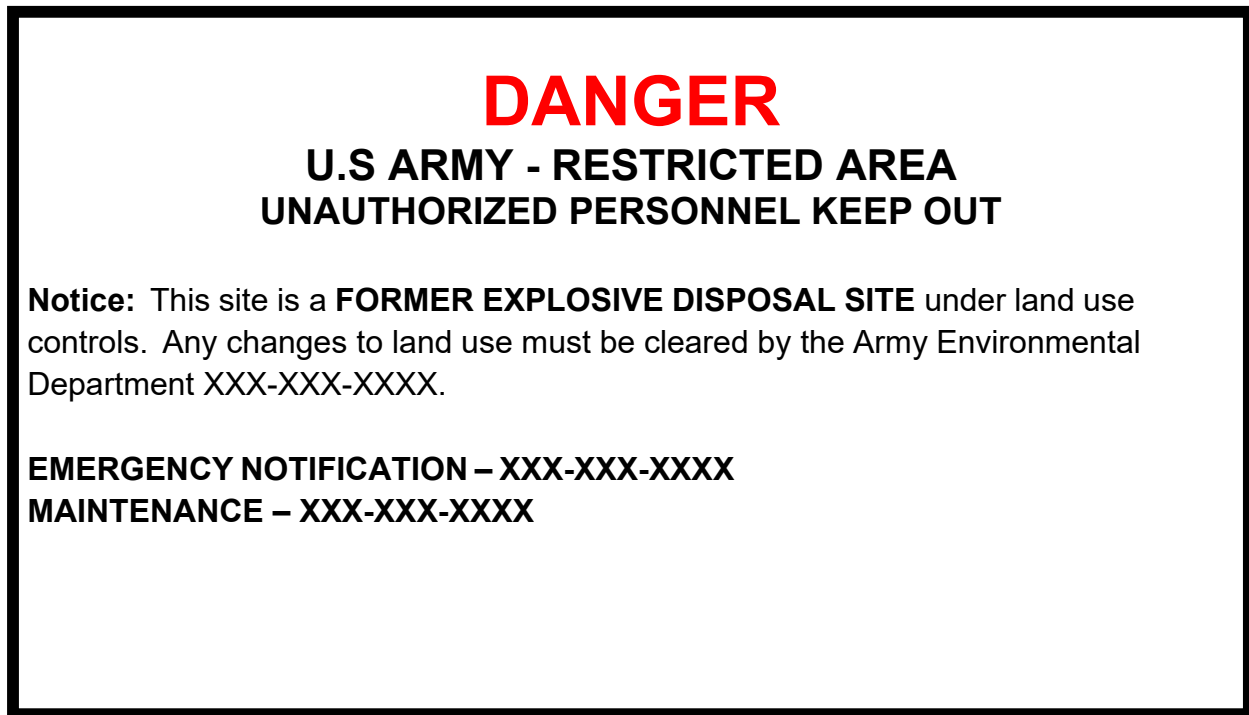
Post-Closure Care Mechanisms

Post-Remedial Alternative requirements, which are also applicable to the ADA area are included in the OU5 ROD. The mechanisms include the following items:

- Maintenance of a natural vegetative cover that will serve as a natural barrier, degrade low-level RDX and TNT, prevent soil erosion, and reduce the potential for contaminant transport.
- Approval by DDESB of the site for a training range
- Limited Land use based on TNARNG training requirements
- Maintenance-related activities include mowing, stormwater washout repairs and area-specific reseeded as necessary
- Implementation of Land Use Controls (LUCs) to prevent contact with site soil and restrict land use and development for residential housing, schools, childcare facilities and playgrounds. Land Use Controls and soil contact will be determined upon the results of the soils investigation and the MEC assessment of the site and DDESB approval.
- Implementation of Land Use Controls will be the responsibility of the National Guard Bureau as part of the signed Memorandum of Agreement (MOA) for the federal-to-federal land transfer, signed August 2022.

Physical LUCs for the ADA area will include site fencing and placement of warning signs. Administrative LUCs will include prohibition of changes in land use by the U.S. Army and deed covenants and conveyance of title in the event of property transfer. LUCs required for the ADA area will be integrated with the Army Land Use Control Implementation Plan.

Example of Warning/Danger Sign



Inspection Plan

Access to the WMA is already controlled by fences and gates, and warning signs are posted on the fencing as described in Section F. The WMA is currently enclosed with a 6-foot chain-link fence with triple stranded barbed wire at the top. The fence has warning signs in English placed at 500-foot intervals. The signs face outward and have the warning "DANGER - UNAUTHORIZED PERSONNEL KEEP OUT" legible from a minimum distance of 25 feet.

Under post closure care, the chain-link fence will be maintained to include mowing and upkeep of structural integrity. Changes to the infrastructure at the site including the chain link fence will be reviewed by the DSWM for concurrence prior to implementation. All entry gates to the WMA will be locked when the area is vacant.

Post-closure inspections will be performed at areas within the ADA that are determined to pose a risk of UXO or COC's according to the approved schedule at Table J-4. For areas where there has been a remedial action such as a cap and contaminants exceed risk levels, ground cover will be inspected in accordance with the approved inspection schedule for erosion, establishment of vegetative cover, mowing of cover, warning signs, evidence of cap or cover failure, and security. Inspections will be recorded with copies of the inspections maintained in the Army Environmental or contractor EHS office. After three (3) years, if no problems are noted and with the approval of TDEC, inspections will be conducted on a semi-annual basis for a minimum of 30 years.

If any areas are closed by capping, the capped areas will be surveyed by a surveyor licensed in the State of Tennessee. The survey placed on a survey plat and maintained in a GIS system. Additionally,

permanent monuments will be set as necessary to monitor soil settling, subsidence and/or displacement. The placement and elevation of the monument will also be recorded on the survey plats. In order to protect the surveyed benchmarks from mowing and other activities that may occur at the site, the monuments will be concrete encapsulated steel pins, set at or slightly below ground surface. The benchmarks will be marked with steel flag pins for an extra measure of protection.

Areas of elevated explosive risk, as determined through the MEC Assessment, will be surveyed by a surveyor licensed in the State of Tennessee. The survey placed on a survey plat and maintained in a GIS system.

Inspection of the monuments will be included in the inspection for mowing and vegetative cover, erosion, settling, and displacement. The run-on and run-off structures associated with the closed units will be included in the inspection and inspected after significant storm events. These inspections will be conducted semi-annually and recorded by the permit owner.

The closed units are located within the former boundary of MLAAP. Since the MLAAP has transferred the majority of its land to the National Guard Bureau (NGB), the former OBG and the ADA are now a part of the TNARNG-VTS. Both the MLAAP and the NGB fall under the command of the Army. The TNARNG-VTS has controlled access, outer perimeter fencing, and restricted operation within the facility. The potential for damage via acts of nature are accounted for by requiring inspection after rainfall events that are significant enough to impact erosion and run-on/run-off. A copy of the annual inspection certification will be provided to the DSWM on an annual basis.

Monitoring Plan

The current semi-annual groundwater-monitoring plan for the WMA is proposed to be discontinued three years after closure of the WMA. CERCLA long-term monitoring currently includes the WMA and addresses releases from this area. See mlaap-ar.com for the MLAAP CERCLA Administrative Record for documents addressing monitoring and remedial action of sitewide groundwater. The Sitewide groundwater monitoring program status is updated annually in a Sitewide Remedial Action Status Report. The current RCRA groundwater monitoring system drawings and the drawings from the current CERCLA groundwater monitoring system are provided for reference.

No post-closure soil sampling will be performed at areas within the WMA that contain residual concentrations of COCs below closure thresholds. For areas where contaminated soil may be capped, any post-closure monitoring will be performed according to the approved LUC. The facility owner will certify once per year that the inspections are being conducted and land use controls are met.

Maintenance Plan

To maintain the integrity of the WMA, any deficiencies noted during inspections will be corrected. Actions taken will also be recorded. Telephone numbers for emergency notification and maintenance will be posted onsite on entry gate to the former ADA. Signs posted in accordance with the current permit at 50-ft. intervals "DANGER – Unauthorized Personnel Keep Out" will remain in place. Records of inspection and maintenance actions will be maintained onsite.

Maintenance of conditions noted during inspection, both routine and non-routine, will be handled as outlined in Table J-5.

Personnel performing the inspection will be trained, experienced and knowledgeable in the closure system employed for use at the WMA. Inspection personnel will make maintenance and repair decisions based on experience and the following criteria (Table J-6).

**Table J-3
Closure Schedule – Waste
Management Area MLAAP**

Closure Activity	Activity Duration (Days)	Cumulative Time (Routine Finish) (Days)	Cumulative Time (Early Finish) (Days)	Comment
Treatment of final inventory of waste	180	180	120	Initial MEC clearance:120 days. LUCs/Post-grading MEC Clearance: 60 days
Soil characterization within the WMA:				
• OD Sampling	170	200	120	Analysis for Explosives and Appendix I inorganics
• Analysis	30	230	135	
• Data Analysis/Definition of Extent of Contamination	90	320	165	
Groundwater characterization at the point of compliance	60	380	165	Can be concurrent with Soil Characterization
Treatment of contaminated soil as necessary:				A combination of alternative approaches, including application of new technologies. Soil treatment can be performed currently at multiple locations, if necessary. Longest duration will dictate schedule. Soil treatment by on-site composting may take up to 18 months
• Excavation/Offsite Disposal	180			
• Excavation for Composting	180			
• Installation of Caps	360	1100	525	
Re-grading the ADA for drainage control	60	1160	555	
Survey of OD Area Boundary Fence	60	1220	560	
Closure Certification	60	N/A	N/A	This activity is not included in the duration of the closure period.

Schedule does not account for DoD funding cycles, contract bidding, and issuance. Human health and the environment would not be endangered by the closure extension. Detailed schedules will be maintained with the TDEC when the MLAAP notifies the State to begin closure.

Table J-4
General Program Inspection Schedule — Security Devices
Post-Closure Plan
Waste Management Area — Army (Former Milan Army Ammunition Plant)

Inspection	Frequency	Log	Issue
Fence	Quarterly	Closure	Damage, holes
Signs	Quarterly	Closure	Damage, missing, illegible
Gates	Quarterly	Closure	Locked, damaged
Erosion	Quarterly and after significant rainfall	Closure	Loss of vegetation, damage to soil cover, pooling water
Subsidence	Quarterly	Closure	Cover settlement, subsidence, displacement
Run-on and Run-off	Quarterly and after significant rainfall	Closure	Blocked structures, damaged structures, erosion
Contoured caps	Quarterly	Closure	Damaged cover
Monitoring wells (IRP Performed)	IRP Schedule	Log Book	Damage, security, protective measures
Benchmarks	Quarterly	Closure	Damage, stability

Note: significant rainfall refers to any precipitation event exceeding a 25-year 24-hour event and the occurrence of storms and other significant weather phenomena having sufficient intensity to cause loss of life, injuries, and significant property damage.

Table J-5
Routine and Non-Routine Inspections Repair Timetable
Post-Closure Plan
Waste Management Area — Army (Former Milan Army Ammunition Plant)

Problem/Unacceptable Condition	Estimated Repair Timetable
Repair of security control devices (gates and fences)	Gates within 14 days
Erosion damage	Capped area within 14 days Other areas within 30 days
Settlement, subsidence, displacement	Capped area within 14 days Other areas within 30 days
Mowing overgrown vegetative cover	Two times annual or more often as required by inspection
Poor vegetative cover	Reseed and fertilize within 30 days
Monitoring well repair	Within 30 days
Run-off/Run-on control structures	Within 14 days
Damaged surveyed benchmark	Within 30 days

Table J-6
Inspections Repair Criteria
Post-Closure Plan
Waste Management Area — Army (Former Milan Army Ammunition Plant)

Items to be Inspected	Issue
Security control devices	Gate Broken or down, unserviceable, warning signs missing or illegible
Erosion damage	Soil below vegetation washed, pooling, or mounding of water o cap, liner exposed, mowing hazarded
Settlement, subsidence, displacement	Standing/pooling water, sinks in cap or adjacent soils
Vegetative cover	Cover too thin, showing exposed soils, cover too tall with potential to hide erosion or displacement, cover spotty allowing erosion
Run-on/Run-off controls	Caps, condition of caps; vegetative cover on caps
Monitoring well condition	Broken or unblocked well covers; broken, damaged or undercut well pad or guards; broken or damages riser pipe; excessive sand and/or silt in well (damaged screen); incompatible well constituent or well construction material
Benchmark integrity	Missing or damaged benchmark locators; unexplained movement or changes in a number of established measuring points

J-3 Closure Cost Estimate

Federal facilities are exempt from closure cost estimate requirements; therefore this section is not applicable.

J-4 Financial Assurance Mechanism for Closure

Federal facilities are exempt from these requirements; therefore this section is not applicable.

J-5 Post Closure Estimate

Federal facilities are exempt from these requirements; therefore this section is not applicable.

J-6 Financial Assurance Mechanism for Post-Closure

Federal facilities are exempt from these requirements; therefore this section is not applicable.

J-7 Liability Requirements

Federal facilities are exempt from these requirements; therefore this section is not applicable.

J-7 State Assumptions for Responsibility

Federal facilities are exempt from these requirements; therefore this section is not applicable.

SECTION K

RISK ASSESSMENT AND AIR QUALITY DISPERSION MODELING

A risk assessment and air quality dispersion modeling were developed for the 2011 permit application at the two miscellaneous thermal treatment units at MLAAP. Since that time, normal treatment operations have ceased, the OB unit has been closed according to the closure plan, and the OD unit needs to be closed according to the closure plan. As such, the risk assessment and air quality dispersion modeling from the 2011 permit will be included in Appendix K as a general reference. The proposed treatment activities associated with the ADA's closure will be significantly reduced and performed on an as needed basis in contrast with the volumes that were historically treated during full plant operations.

The treatment activities to occur at the ADA will be for the consolidation and treatment of items with minimal explosive residue during surface clearing efforts as well as the possible treatment items identified as too dangerous to move discovered during closure activities.

The overall risk to human health and the environment for historical treatment actions was greater than the proposed treatment actions due to the significant differences in frequency and magnitude of treatment events. As such the original risk assessment and air quality dispersion modeling more than accounts for the anticipated risk of closure activities.

SECTION L

OTHER FEDERAL AND STATE LAWS

This information has been provided in accordance with the requirements of 40 Code of Federal Regulations (CFR) 270.14(b)(20) and 40 CFR 270.3. The following laws must be met when they apply to Milan Army Ammunition Plant's (MLAAP) miscellaneous thermal treatment unit (MTTU) and the waste management area (WMA).

L-1 COASTAL ZONE MANAGEMENT ACT

The Coastal Zone Management Act (16 U.S. Code [U.S.C.] 1451, et seq.) and the regulations regarding its implementation (15 CFR 930) do not apply to the MTTU since MLAAP does not lie in a coastal zone as defined in Section 304(1) of 16 U.S.C. 1453.

L-2 ENDANGERED SPECIES ACT

The U.S. Fish and Wildlife Service, under the Endangered Species Act (16 U.S.C. 1531, et seq.), must survey the land for "species of concern" and endangered species. Regulations governing the provisions of this act are in 50 CFR 402. There are no known threatened and/or endangered species at the WMA, as listed in "*The Fish, Amphibians and Reptiles of Milan Army Ammunition Plant, Gibson and Carroll Counties, Tennessee*" (Brian T. Miller, pH.D, State Coordinator, Declining Amphibian Population Task Force, MTSU), "*The Mammal and Bird Survey of Milan Army Ammunition Plant, Milan Tennessee*", and "*Milan Army Ammunition Plant, An Investigation of Rare Plant Occurrences and Select Natural Areas*", (The Nature Conservancy, Tennessee Chapter). While no known threatened and/or endangered species are present at the WMA, there are, however, 4 proposed threatened and/or endangered species in the larger footprint of MLAAP. The 4 proposed threatened and/or endangered species are as follows: Tricolored Bat (*Perimyotis subflavus*), Whooping Crane (*Grus americana*), Alligator Snapping Turtle (*Macrochelys temminckii*), and Monarch Butterfly (*Dianthus plexippus*). For the Tricolored Bat, Whooping Crane, and Alligator Snapping Turtle, no critical habitat has been designated for these species. For the Monarch Butterfly, there is a proposed critical habitat for this species, however, the proposed critical habitat does not overlap with our region.

Table L-1 lists rare species located in the USGS Spring Creek Quadrangle identified in Tennessee Natural Heritage Program. These species may not be located at MLAAP. The specific data from the Web site is in Appendix L-1.

Table L-1
TN Natural Heritage Program and Rare Species
MLAAP — Milan, Tennessee

Name	Spring Creek Quadrangle
Chickasaw Darter	D
Compass Plant	S2, T
Willow Aster	S1, S

Notes:

- D — Deemed in Need of Management, defined as any species or subspecies of nongame wildlife which the executive director of the Tennessee Wildlife Resources Agency believes should be investigated in order to develop information relating to populations, distribution, habitat needs, limiting factors, and other biological and ecological data to determine management measures necessary for their continued ability to sustain themselves successfully.
- E — Endangered, defined as any species or subspecies whose prospects of survival or recruitment within the state are in jeopardy or are likely to become so within the foreseeable future.
- E-P — Proposed Endangered, defined as any species or subspecies of plant nominated by the Scientific Advisory Committee to be added to the list of Tennessee's endangered species. After approval by the commissioner of TDEC and the concurrence of the commissioner of Agriculture, these plants will formally become State endangered.
- S — Special Concern, defined as any species or subspecies of plant that is uncommon in Tennessee, or has unique or highly specific habitat requirements or scientific value and therefore requires careful monitoring of its status.
- S1 — Extremely rare and critically imperiled in the state with five or fewer occurrences, or very few remaining individuals, or because of some special condition where the species is particularly vulnerable to extinction.
- S2 — Very rare and imperiled within the state (six to 20 occurrences), few remaining individuals, or because of some factor(s) making it vulnerable to extinction.
- S3 — Rare and uncommon in the state (from 21 to 100 occurrences).
- S4 — Widespread, abundant, and apparently secure within the state, but with cause for long-term concern.
- SH — Of historical occurrence in Tennessee, e.g. formally part of the established biota, with the expectation that it may be rediscovered.
- S#S# — Denotes a "range rank" because the rarity of the species is uncertain (e.g. S1S3)
- T — Threatened, defined as any species or subspecies that is likely to become an endangered species within the foreseeable future.
- SNR, S2B — Not Defined.

L-3 FISH AND WILDLIFE COORDINATION ACT

The Fish and Wildlife Coordination Act (16 U.S.C. 661, et seq.) pertains to activities that might adversely affect fish and wildlife, such as diverting, impounding, or controlling waters. Operations at WMA are not expected to impound, divert, control, or modify any surface water; therefore, this Act does not apply.

L-4 NATIONAL HISTORIC PRESEVATION ACT OF 1966

The National Historic Preservation Act of 1966 (16 U.S.C 470, et seq.), includes a federal review process pertaining to activities that may affect cultural resources. The regulations ensuring compliance with the provisions of the act are in 36 CFR 800. The National Register of Historic Places, National Register Information System (NRHP NRIS) lists one facility — Browning House — on MLAAP property. The facility is east of Milan in Gibson County. The Browning House is 3.4 miles northwest

of the WMA. Carroll county has a total of 4 places on the NRHP and they are in cities at least 5 miles from the WMA. Gibson County has a total of 18 places on the NRHP and they are in cities at least 5 miles from the WMA- excluding the Browning House.

Available information does not indicate that operation of the MTTU will have any effect on properties listed or eligible for listing in the National Register of Historic Places. Information for the NRHP NRIS is in Appendix L-2.

L-5 WILD AND SCENIC RIVERS ACT

The Wild and Scenic Rivers Act (16 U.S.C. 1273, et seq.), does not apply to the WMA since they will not affect any water bodies designated as wild and scenic rivers.

SECTION M

REFERENCES

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Measurements of Air and Ground Shock Disturbance Arising from Demolition Activities at Milan Arsenal, Report No. 5, September 1957

SECTION N

PART B PERMIT APPLICATION CERTIFICATION

In accordance with 40 CFR 270.11(d)(1) and TNHW Rules 0400-12-01-.07(2)(a)(10)(i)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Thomas Nowell
Commander's Representative
US Army – Milan Army Ammunition Plant / National Guard Bureau

4 Nov 25
Date

**SECTION O
PUBLIC NOTICE INFORMATION**

O-1 Pre-Application Public Notice Information

- O-1 (a) Pre-Application Public Notice
- O-1 (b) Pre-Application Public Notice Sign
- O-1 (c) Pre-Application Public Radio Spot Invoice
- O-1 (d) Pre-Application Newspaper Publication Invoice
- O-1 (e) Pre-Application Public Notice Mail Delivery Information
- O-1 (f) Pre-Application Public Meeting Attendee Sign-In Sheets
- O-1 (g) Pre-Application Public Meeting Presentation- Community Impact Statement
- O-1 (h) Pre-Application Public Meeting Information & Comments

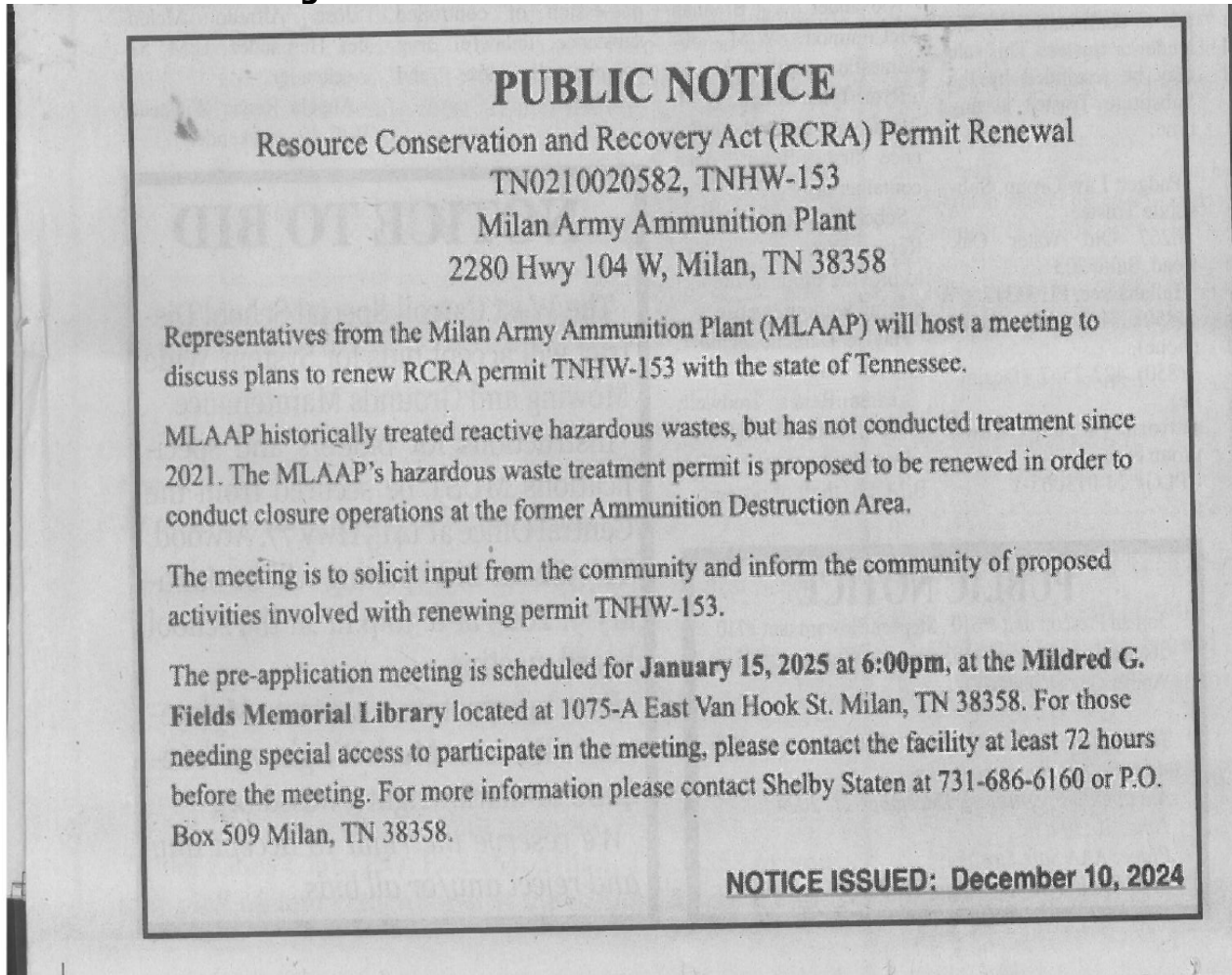
O-2 Closed Hazardous Waste Unit(s) Public Notice Information

- O-2 (a) Public Notice for Closed Hazardous Waste Unit(s)- Notification of Class 2 Modification Request
- O-2 (b) Newspaper Publication Invoice- Class 2 Modification Request
- O-2 (c) Public Notice Mail Delivery Information- Class 2 Modification Request
- O-2 (d) Public Meeting Attendee Sign-In Sheets- Class 2 Modification Request
- O-2 (e) Public Meeting Presentation- Class 2 Modification Request
- O-2 (f) Public Notice for Closed Hazardous Waste Unit(s)- Notice of Final Decision for Class 2 Modification
- O-2 (g) Newspaper Publication Invoice- Notice of Final Decision for Class 2 Modification
- O-2 (h) Certified Mail Receipt for Mail Sending Proof of Public Notice Issuance- Notice of Final Decision for Class 2 Modification

O-1 Pre Application Public Notice Information

O-1(a) Pre-Application Public Notices

Milan Mirror Exchange Public Notice:



Radio Station Public Notice Script:

Hazardous Waste Permit Pre-Application Meeting at MLAAP

"Representatives from the Milan Army Ammunition Plant (MLAAP) will host a meeting to discuss plans to renew its hazardous waste permit TNHW-153 with the state of Tennessee. MLAAP historically treated reactive hazardous wastes, but has not conducted treatment since 2021. The MLAAP's hazardous waste treatment permit is proposed to be renewed in order to conduct closure operations at the former Ammunition Destruction Area. The meeting is to solicit input from the community and inform the community of proposed activities involved with renewing permit TNHW-153.

The pre-application meeting is scheduled for **January 15, 2025 at 6:00pm**, at the **Mildred G. Fields Memorial Library** located at 1075-A East Van Hook St. Milan, TN 38358. For those needing special access to participate in the meeting, please contact the facility at least 72 hours before the meeting. For more information please contact Shelby Staten at 731-686-6160 or P.O. Box 509 Milan, TN 38358."

O-1(b) Pre-Application Public Notice Sign

Pre-Application Public Notice Sign Design:

Public Notice

Resource Conservation and Recovery Act (RCRA) Permit Renewal
TN0210020582, TNHW-153
Milan Army Ammunition Plant
2280 Hwy 104 W, Milan, TN 38358

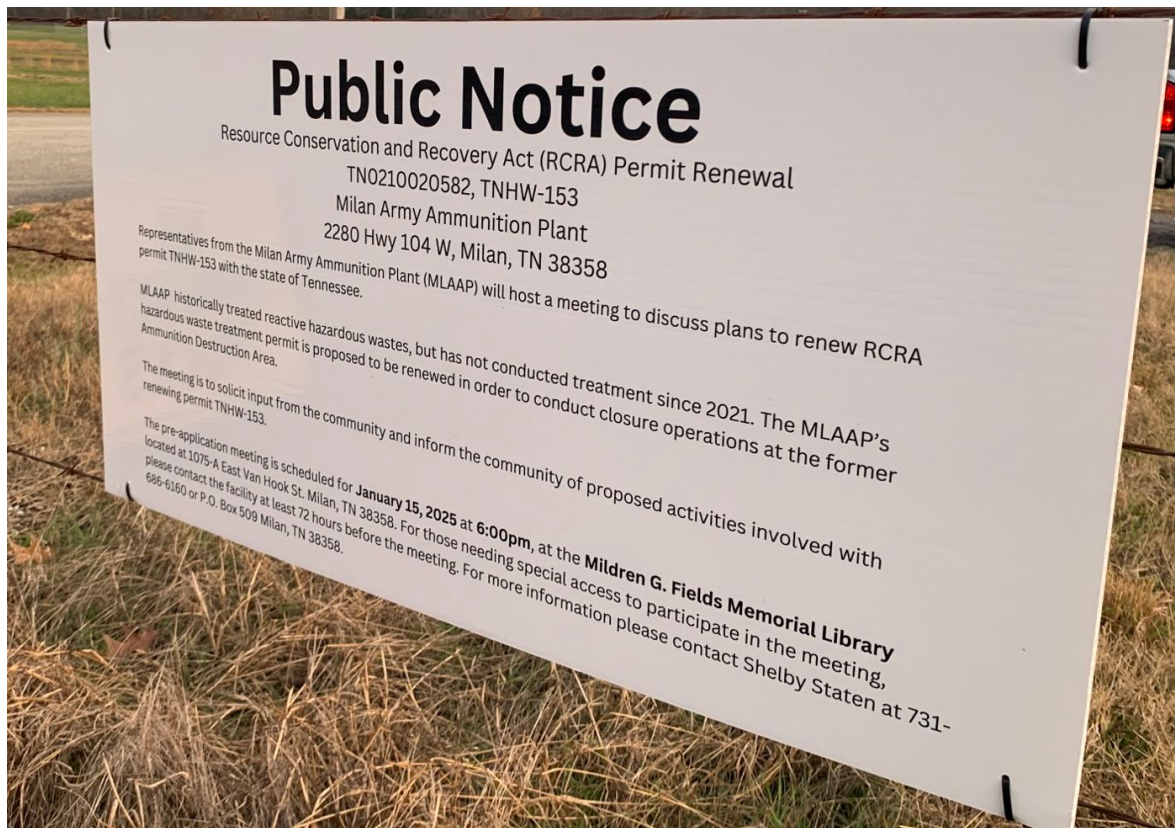
Representatives from the Milan Army Ammunition Plant (MLAAP) will host a meeting to discuss plans to renew RCRA permit TNHW-153 with the state of Tennessee.

MLAAP historically treated reactive hazardous wastes, but has not conducted treatment since 2021. The MLAAP's hazardous waste treatment permit is proposed to be renewed in order to conduct closure operations at the former Ammunition Destruction Area.

The meeting is to solicit input from the community and inform the community of proposed activities involved with renewing permit TNHW-153.

The pre-application meeting is scheduled for **January 15, 2025 at 6:00pm**, at the **Mildren G. Fields Memorial Library** located at 1075-A East Van Hook St. Milan, TN 38358. For those needing special access to participate in the meeting, please contact the facility at least 72 hours before the meeting. For more information please contact Shelby Staten at 731-686-6160 or P.O. Box 509 Milan, TN 38358.

Pre-Application Public Notice Sign:



O-1(c) Pre-Application Public Radio Spot Invoice:

**Thomas Media Stations- WHHM 107.7 – FM; WWYN 106.9 – FM; WZDQ 102.5 – FM;
WFKX 95.7 – FM; WJAK 1460 – AM**

Invoice

From:

Thomas Media, LLC
111 West Main St.
Jackson, TN 38305
731-427-9616

To:

Caleb Johnson / American Ordnance, LLC
Milan, TN 38358
731-686-6675

Invoice Number: PSA-001

Invoice Date: 12/12/24

Due Date: 12/12/24

Description of Service:

Description	Quantity	Unit Price	Total
Public Service Announcement (Free Service)	1	\$0.00	\$0.00

Total Due: \$0.00

Notes:

This invoice represents a free public service announcement provided by Thomas Media. No payment is due. We hope the PSA benefits your cause and supports your mission.

Thank you for the opportunity to assist with this community service.

Payment Information:

No payment required for this service.

O-1(e) Pre-Application Public Notice Mail Delivery Information:

Mailed Public Notice:

PUBLIC NOTICE

Resource Conservation and Recovery Act (RCRA) Permit Renewal
TN0210020582, TNHW-153
Milan Army Ammunition Plant
2280 Hwy 104 W, Milan, TN 38358

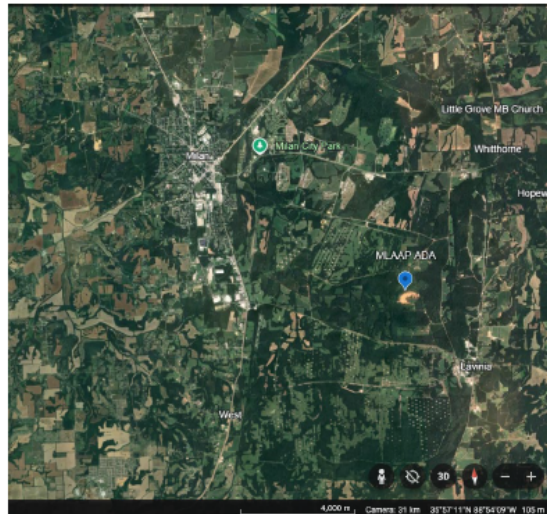
Representatives from the Milan Army Ammunition Plant (MLAAP) will host a meeting to discuss plans to renew RCRA permit TNHW-153 with the state of Tennessee.

MLAAP historically treated reactive hazardous wastes, but has not conducted treatment since 2021. The MLAAP's hazardous waste treatment permit is proposed to be renewed in order to conduct closure operations at the former Ammunition Destruction Area.

The meeting is to solicit input from the community and inform the community of proposed activities involved with renewing permit TNHW-153.

The pre-application meeting is scheduled for **January 15, 2025 at 6:00pm**, at the **Mildren G. Fields Memorial Library** located at 1075-A East Van Hook St. Milan, TN 38358. For those needing special access to participate in the meeting, please contact the facility at least 72 hours before the meeting. For more information please contact Shelby Staten at 731-686-6160 or P.O. Box 509 Milan, TN 38358.

NOTICE ISSUED: December 10, 2024



Signed Public Notice Mailing Certification Statement:

MLAAP Public Notice Certification Statement

I, Caleb Johnson, verify the attached pre-application meeting public notice for Tennessee Hazardous Waste Permit Number TNHW-153 was sent to all the persons on the enclosed list(s) by certified mail on 12/10/2024.


X Signature of person responsible for the mailing

Mailing List and Certified Mail Receipt Numbers for Whom Public Notices Were Sent:

Active	IntakeNum	CALLERFIR	CALLERLAS	TOTALNAN	Title	REPRESENT	CALLERAD	ADDRESS2	CALLERCIT	STATE	ACTUALZIP	COUNTY	Specific	Col	Wants	Ever	Wants	Ever	Transmitta	Certified Mail Reciept Number
TRUE	2024-2915	Rachel	Ballard	Rachel Ball	Senior Engi	Nashville	E 1214 Church Street		Nashville	TN	37246	STATEWID	TRUE	TRUE	TRUE	FALSE				7020 0090 0000 2777 9756
TRUE	2000-28	Scott	Barker	Scott Barker	Barker Bro	PO Box 317			Troy	TN	38260	GIBSON	TRUE	FALSE	TRUE	FALSE				7020 0090 0000 2777 9602
TRUE	2016-2095	BW	Beasley	BW Beasley	Mayor	City of Mila	1061 S. Main St.		Milan	TN	38358	GIBSON	TRUE	TRUE	TRUE	TRUE				7020 0090 0000 2777 9619
TRUE	2011-715	Lou	Bosco	Lou Bosco	Owner	Bosco Cont	3836 Highway 45 N		Jackson	TN	38305	GIBSON	TRUE	FALSE	TRUE	FALSE				7020 0090 0000 2777 9626
TRUE	2023-2855	Tony	Burriss	Tony Burriss	Mayor	City of Tre	309 South College Stre		Trenton	TN	38382	GIBSON	TRUE	TRUE	TRUE	TRUE				7020 0090 0000 2777 9633
TRUE	2011-717	Harrell	Carter	Harrell Carter		Jackson Me	PO Box 2404		Jackson	TN	38302	STATEWID	TRUE	FALSE	TRUE	FALSE				7020 0090 0000 2777 9640
TRUE	2000-77	Michael	Cimbalo	Michael Cimbalo		E. F. Williar	751 E. Brookhaven Cl		Memphis	TN	38117	GIBSON	TRUE	FALSE	TRUE	FALSE				7020 0090 0000 2777 9657
TRUE	2016-2094	Vance	Coleman	Vance Cole	Mayor	Town of M	201 Highwi	P.O. Box 4	Medina	TN	38355	GIBSON	TRUE	TRUE	TRUE	TRUE				7020 0090 0000 2777 9664
TRUE	2014-1075	SARA Title	Coordinato	SARA Title III	Coordina	Tennessee	3041 Sidco Drive		Nashville	TN	37204	STATEWID	TRUE	FALSE	TRUE	TRUE				7020 0090 0000 2777 9671
TRUE	2023-2857	Nelson	Cunninghai	Nelson Cur	County Ma	Gibson Cou	One Court Square		Trenton	TN	38382	GIBSON	TRUE	TRUE	TRUE	TRUE				7020 0090 0000 2777 9688
TRUE	2015-1864	David	Dewberry	David Dew	Environme	Ceco Door	9159 Telecom Dr		Milan	TN	38358	GIBSON	TRUE	TRUE	TRUE	FALSE				7020 0090 0000 2777 9695
TRUE	2012-794	Lee	Harris	Lee Harris	Mayor	Shelby Cou	160 N. Mai	11th Floor	Memphis	TN	38103	STATEWID	TRUE	FALSE	TRUE	FALSE				7020 0090 0000 2777 9718
TRUE	2023-2894	Jim	Hill	Jim Hill	Mayor	Town of Gi	2202 Gibso	P.O. Box 3	Gibson	TN	38338	GIBSON	TRUE	TRUE	TRUE	TRUE				7020 0090 0000 2777 9725
TRUE	2014-987	Rep. Chris	Hurt	Rep. Chris	I State Repr	District 82	425 5th Av	Suite 500	C Nashville	TN	37243	GIBSON	TRUE	TRUE	TRUE	TRUE				7020 0090 0000 2777 9701
TRUE	2016-2093	Danny	Jowers	Danny Jow	Vice Mayor	Town of Ke	108 North Poplar Stre		Kenton	TN	38233	GIBSON	TRUE	TRUE	TRUE	TRUE				7020 0090 0000 2777 9732
TRUE	2014-886	Casey	Lee	Casey Lee	Historic Pre	Tennessee	2941 Lebanon Rd		Nashville	TN	37243	STATEWID	TRUE	TRUE	TRUE	TRUE				7020 0090 0000 2777 9749
TRUE	2023-2851	Rep. Brock	Martin	Rep. Brock	State Repr	District 79	425 Rep. Jc	Suite 652	C Nashville	TN	37243	GIBSON	TRUE	TRUE	TRUE	TRUE				7020 0090 0000 2777 9763
TRUE	2023-2852	Dwayne	Reynolds	Dwayne Re	Mayor	City of Brac	PO Box 87		Bradford	TN	38316	GIBSON	TRUE	TRUE	TRUE	TRUE				7020 0090 0000 2779 1475
TRUE	2016-2092	Marvin	Sikes	Marvin Siki	Mayor	City of Hun	1201 Main Street		Humboldt	TN	38343	GIBSON	TRUE	TRUE	TRUE	TRUE				7020 0090 0000 2779 1482
TRUE	2016-2096	Sandra	Simpson	Sandra Sim	Mayor	Town of Ru	PO Box 487	202 East M	Rutherford	TN	38369	GIBSON	TRUE	TRUE	TRUE	TRUE				7020 0090 0000 2779 1499
TRUE	2014-940	Sen. John	Stevens	Sen. John S	State Senat	District 24	425 5th Av	Suite 710	C Nashville	TN	37243	GIBSON	TRUE	TRUE	TRUE	TRUE				7020 0090 0000 2779 1505
TRUE	2023-2893	Chris	Younger	Chris Youn	Mayor	City of Dye	105 South Main Street		Dyer	TN	38330	GIBSON	TRUE	FALSE	TRUE	TRUE				7020 0090 0000 2779 1512
TRUE	2023-2853	Mack	Zarecor	Mack Zare	Mayor	City of Yor	P.O. Box 177		Yorkville	TN	38389	GIBSON	TRUE	TRUE	TRUE	TRUE				7020 0090 0000 2779 1529

O-1(f) Pre-Application Public Meeting Attendee Sign-In Sheets:

REGISTRATION SHEET for PUBLIC HEARING

PLEASE PRINT

Date: January 15, 2025

Pre- Application meeting for renewal of Hazardous Waste Treatment Permit for
Milan Army Ammunition Plant – TN0210020582
Mildred G. Fields Memorial Library, Meeting Room
1075-A East Van Hook St. Milan, TN 38358

NAME	Representing (Indicate organization name or private citizen)	ADDRESS (Or your email address)	ZIP CODE	I Wish to Comment (✓)	Send Me the Response to Comments (✓)
Jordan Evans	TN ARNG	jordan.l.evans 20.mfg@army.mil	38242		
Clayton Goodwin	TN ARNG	clayton.m.goodwin@army.mil	38465		
Greg Turner	TN ARNG	greg.m.turner mfg@army.mil	38463		
Walt Gee	ARNG	Walter.F.Gee.civ@army.mil	22306		
Shelby Stator	MLAAP	shelby.t.stator.civ @army.mil	38358		
Tom Nowell	MLAAP	thomas.s.nowell.civ@army.mil	38354		
BMC Comptroller	MLAAP Army	william.r.cornigay civ@army.mil	38358		

REGISTRATION SHEET for PUBLIC HEARING

PLEASE PRINT

Date: January 15, 2025

Pre- Application meeting for renewal of Hazardous Waste Treatment Permit for
Milan Army Ammunition Plant – TN0210020582
Mildred G. Fields Memorial Library, Meeting Room
1075-A East Van Hook St. Milan, TN 38358

NAME	Representing (Indicate organization name or private citizen)	ADDRESS (Or your email address)	ZIP CODE	I Wish to Comment (✓)	Send Me the Response to Comments (✓)
Caleb Johnson	MLAAP - American Ordnance	Caleb.Johnson@dollic.biz	38305		✓

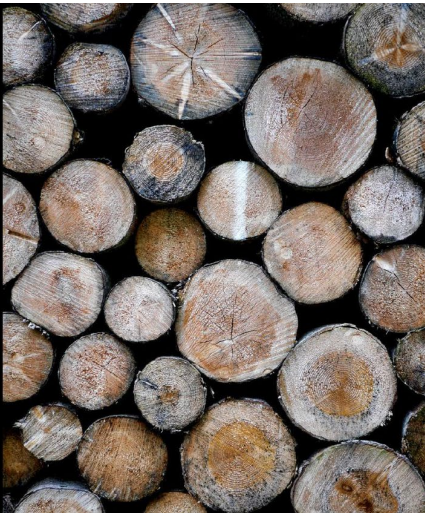
O-1(g) Pre-Application Public Meeting Presentation- Community Impact Statement:

PRE-APPLICATION PUBLIC MEETING

MILAN ARMY AMMUNITION PLANT

RCRA PERMIT RENEWAL FOR TNHW-153
EPA ID: TN0210020582
2280 HWY 104 W, MILAN, TN 38358

Meeting Info:
January 15, 2025– 6:00pm at Mildred G. Fields Memorial Library located at 1075-A East Van Hook St. Milan, TN 38358



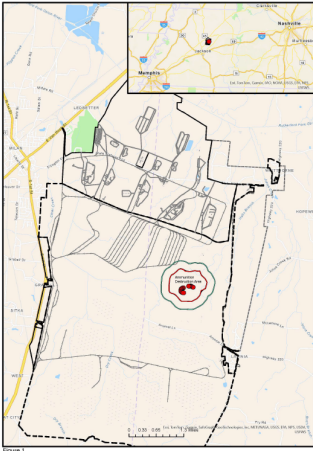


Figure 3
Ammunition Destruction Area (ADA)
Location Map

MLAAP COMMUNITY IMPACT STATEMENT- FACILITY DESCRIPTION

i) The MLAAP was a government-owned, contractor-operated (GOCO) facility located in portions of Gibson and Carroll counties.

The Ammunition Destruction Area (ADA) is located in Area “W” of the former MLAAP property that was used from 1947 until 2021 for the open detonation of waste military munitions. In August 2022, there was 16,133 acres transferred to the NGB and licensed to the TNARNG as an addition to the “Volunteer Training Site”.

The Ammunition Destruction Area (ADA) is now within the boundary of what is the Tennessee Army National Guard Volunteer Training Site. The ADA remains under the control of the Department of Defense and both the NGB and TNARNG are subject to the same Army, State, and Federal regulations as the former MLAAP.

2

MLAAP – FACILITY DESCRIPTION

i- Continued) Proposed hazardous waste management activities at the ADA include only the management of discarded military munitions (DMM) or Unexploded Ordnance (UXO) during RCRA closure of the site. Management of the DMM will include open detonation of explosives.

DMM includes military munitions that have been abandoned without proper disposal or removed from storage in a military magazine or other storage area for the purpose of disposal.

UXO includes military munitions that have been primed, fuze, armed, or otherwise prepared for action; have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installation, personnel, or material; and remain unexploded either by malfunction, design, or another cause.



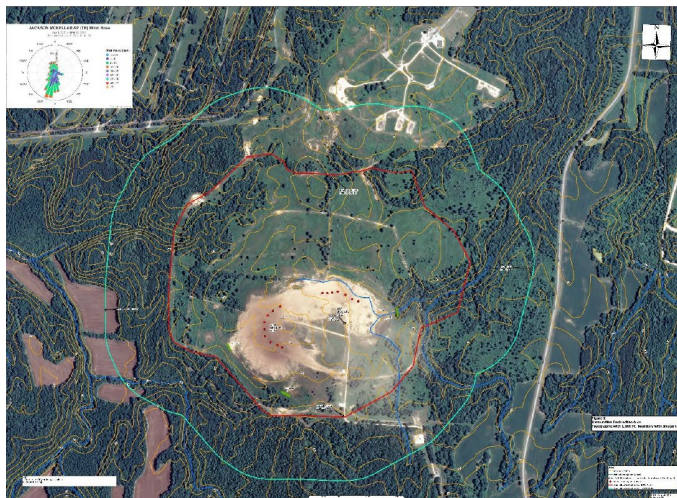
Pre-Application Public Meeting Presentation- Community Impact Statement Slides: **--Continued**

MLAAP – FACILITY DESCRIPTION

i- Continued) Proposed hazardous waste management activities at the ADA include only the management of discarded military munitions (DMM) or Unexploded Ordnance (UXO) during RCRA closure of the site. Management of the DMM will include open detonation of explosives.

DMM includes military munitions that have been abandoned without proper disposal or removed from storage in a military magazine or other storage area for the purpose of disposal.

UXO includes military munitions that have been primed, fuze, armed, or otherwise prepared for action; have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installation, personnel, or material; and remain unexploded either by malfunction, design, or another cause.



MLAAP – FACILITY DESCRIPTION

To the left is a map of the ammunition destruction area (ADA), where closure work needs to be conducted.

4

MLAAP – PROCEDURES, STRUCTURES OR EQUIPMENT USED TO PREVENT EMPLOYEE EXPOSURE

iv) Treatment of military munitions will be conducted during closure of the ADA.

Extensive engineering controls for treatment of military munitions will be implemented as specified in the Quality Assurance Project Plan (QAPP).

- Ordnance and Explosive Safety Specialist (OESS)
- Visual survey
- Surface & Subsurface Geophysical Investigation
- Remote control excavation
- Barricaded equipment
- Safe distances



Pre-Application Public Meeting Presentation- Community Impact Statement Slides: --Continued

MLAAP – DESCRIPTION OF TRAFFIC PATTERNS, ACCESS ROADS ETC.

v) The ADA is approximately 4.2 miles south of Highway 104 and Plant Route 23 intersection. There is one entrance to the ADA unit from a main road. All roads leading to the ADA are paved with asphalt. Internal roads at the ADA area are surfaced with either asphalt or gravel. All roads are maintained and capable of handling heavy trucks and equipment. No bridges are in the ADA, only circular culverts. Condition of the roads during inclement weather does not pose a threat to the movement of hazardous waste or emergency vehicles.

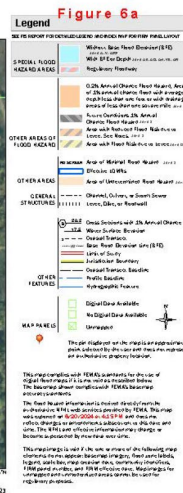
No shipments of hazardous waste are entering into the ADA. At the time site characterization and remediation of the site begins, there will be approximately 40 vehicles that will enter into and exit the site each day. Vehicles will mostly consist of tractor trailers with lowboys, light trucks and cars. One truck hauling out hazardous waste for offsite treatment is expected each calendar quarter.

All road intersections are controlled with stop or yield signs. Only permitted vehicles are allowed to enter into the ADA. During hours when no operations are conducted at the ADA, the entrance gate is closed and locked.



9

National Flood Hazard Layer FIRMette



MLAAP – LOCATION RELATIVE TO FLOOD PLAINS

vi) There are no 100- year floodplains with or near the Ammunition Destruction Area.

10

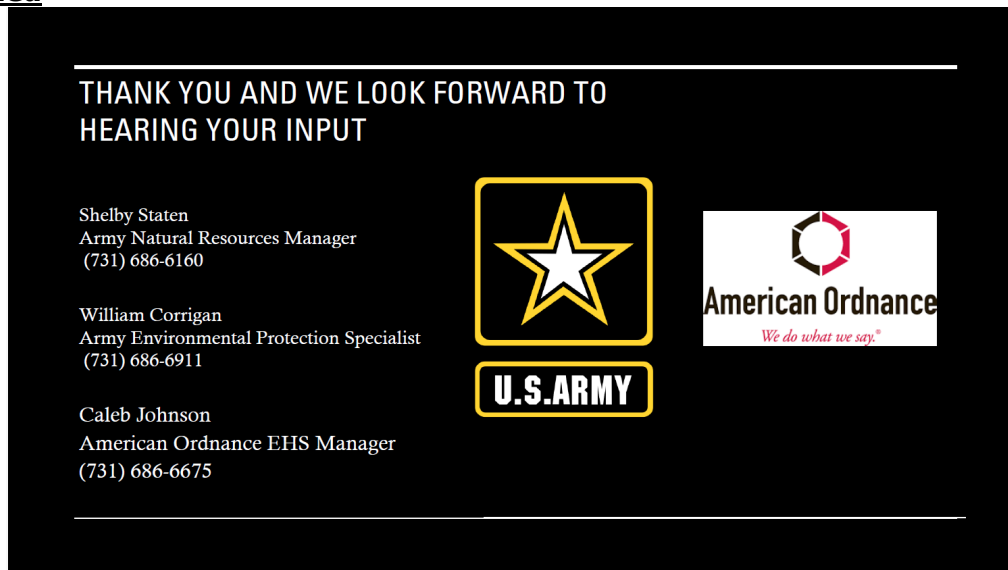
MLAAP – LOCATION RELATIVE TO FLOOD PLAINS

Vi – Continued) There are no 100- year floodplains with or near the Ammunition Destruction Area.



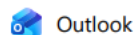
Figure 6
ADA Area Floodplains Location Map
Drawn: 29 August 2024
By: B. Compton

Pre-Application Public Meeting Presentation- Community Impact Statement Slides:
--Continued



O-1(h) Pre-Application Public Meeting Information & Comments:

No members of the public attended this meeting. Additionally, no comments were made. See corroborating email below to TDEC regarding meeting information.



Pre Application Public Meeting Sign-In Sheet

From Johnson, Caleb <Caleb.Johnson@aolc.biz>
Date Tue 1/21/2025 5:26 PM
To Morgan Beck <Morgan.Beck@tn.gov>
Cc lucas.mckinney@tn.gov <Lucas.McKinney@tn.gov>

1 attachment (619 KB)

Pre Application Meeting Sign In Sheet_ TNHW-153.pdf;

Good Afternoon, Ms. Beck and Mr. McKinney,

Please see the attached Sign-In Sheet for the Pre-Application Meeting that was held on January 15th at 6:00pm at the Mildred G Fields Library in Milan, TN. While no members of the public were present, there were representatives from the Army/MLAAP, Army National Guard, and the Tennessee Army National Guard in attendance. I gave the Community Impact Statement presentation, and all went well. No comments were made.

Let me know if you have any questions!
Respectfully,

Caleb Johnson

Environmental, Health, & Safety Manager | American Ordnance, LLC

Milan Army Ammunition Plant – Milan, Tennessee

O 731.686.6675 | C 616.334.3668

Caleb.Johnson@aolc.biz

<http://www.aolc.biz>



O-2 Closed Hazardous Waste Unit(s) Public Notice Information

O-2(a) Public Notice for Closed Hazardous Waste Unit(s)-Notification of Class 2

Modification Request:



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
MILAN ARMY AMMUNITION PLANT
PO Box 509
MILAN, TENNESSEE 38358-3176

Date: October 1, 2024

To: Facility Mailing List for Gibson County

From: Milan Army Ammunition Plant

Subject: Notification of Class 2 Modification
Hazardous Waste Management Permit(s) TNHW-153

Milan Army Ammunition Plant, located at 2280 Highway 104 W Milan, Tennessee 38358, submitted a Class 2 modification to the Division of Solid Waste Management, Hazardous Waste Management Program, Hazardous Waste Permitting section located at the Davy Crockett Tower, 7th Floor, 500 James Robertson Parkway, Nashville, TN 37243 on June 11, 2024. As per Tennessee Hazardous Waste Rule 0400-12-01-.07(9)(c)(5)(ii), the Class 2 modification specifies changes being made to the permit and requirements of submission. The 60-day public comment period will begin on October 1st, 2024, and will end on November 30, 2024. A public meeting will be held on October 23rd, 2024, at the Milan Public Library at 6:00pm.

The Milan Army Ammunition Plant's hazardous waste treatment permit, TNHW-153, allowed for the thermal treatment of certain reactive hazardous wastes in burn pans. These burn pans primarily treated waste propellants. The modification updates the following information:

- The Milan Army Ammunition Plant requested the removal of the RCRA burn pans and pads from the TNHW-153 permit. This modification will accurately reflect the status of the site as the RCRA burn pans and pads were formally decontaminated and closed according to the closure plan in TNHW-153.

Further information on this matter may be obtained by contacting William Corrigan at (731) 686-6911. A copy of the permit modification request and supporting documentation can be viewed and copied at the Milan Public Library.

The contact for the Division of Solid Waste Management (DSWM) is Ms. Beverly Philpot, Hazardous Waste Program Manager, located at DSWM's Central Office at the Davy Crockett Tower, 7th Floor, 500 James Robertson Parkway, Nashville, TN 37243, phone (615-795-1188), fax 615-532-0938 or email Beverly.Philpot@tn.gov. When submitting comments, please note the permit number on which you are commenting. The permittee's compliance history during the life of the permit being modified is available from the DSWM contact person.

Date Issued: October 1, 2024

O-2(c) Public Notice Mail Delivery Information- Class 2 Modification Request:

Mailing List and Certified Mail Receipt Numbers for Whom Public Notices Were Sent:

Recipient Name	Certified Mail Receipt Number
Scott Barker	7020 0090 0000 2777 9961
BW Beasely	7020 0090 0000 2777 9978
Lou Bosco	7020 0090 0000 2777 9985
Tony Burriss	7020 0090 0000 2777 9992
Harrell Carter	7020 0090 0000 2778 0004
Michael Cimbalo	7020 0090 0000 2778 2510
Vance Coleman	7020 0090 0000 2778 2527
SARA Title III Coordinator	7020 0090 0000 2778 6457
Nelson Cunningham	7020 0090 0000 2778 7126
David Dewberry	7020 0090 0000 2778 7133
Rep. Curtis Halford	7020 0090 0000 2777 9954
Lee Harris	7020 0090 0000 2778 6570
Jimmie Hill	7020 0090 0000 2778 6563
Danny Jowers	7020 0090 0000 2777 9473
Casey Lee	7020 0090 0000 2777 9480
Steve Murphy	7020 0090 0000 2777 9497
Ruth Murray	7020 0090 0000 2777 9503
Dwayne Reynolds	7020 0090 0000 2777 9510
Marvin Sikes	7020 0090 0000 2777 9527
Sandra Simpson	7020 0090 0000 2777 9534
Sen. John Stevens	7020 0090 0000 2777 9541
Karen Wieckert	7020 0090 0000 2777 9558
Chris Younger	7020 0090 0000 2777 9565
Mack Zarecor	7020 0090 0000 2777 9572

O-2(e) Public Meeting Presentation- Class 2 Modification Request:

PUBLIC MEETING- CLASS 2 PERMIT MODIFICATION

MLAAP HAZARDOUS WASTE
PERMIT TNHW-153 DISCUSSION

MILAN PUBLIC LIBRARY
6:00 PM- OCTOBER 23, 2024

BACKGROUND

The Milan Army Ammunition Plant operated a burning ground area where reactive hazardous wastes could be treated through incineration in burn pans.

MLAAP ceased treating hazardous wastes in 2021 and began preparing for closing the burning grounds.

This activity was permitted under TNHW-153 hazardous waste treatment permit.



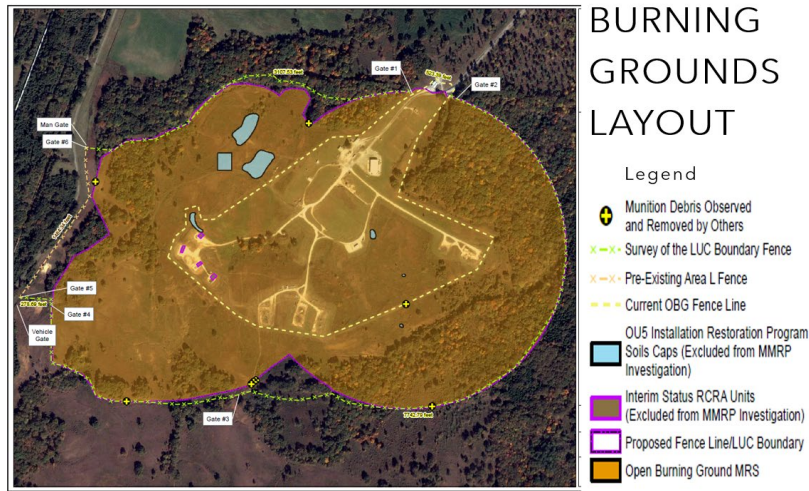
OBG SITE LOCATION AND LAND USE

Site Location:	Land Use:
• East-central portion of Milan • 111-acre former OBG area	• Formerly used as RCRA-permitted area for burning operations • Vehicular travel on unpaved roads • Mowing / site maintenance • Remainder of OBG not in use • No planned land use changes



3

Public Meeting Presentation Slides- Class 2 Modification Request: Continued



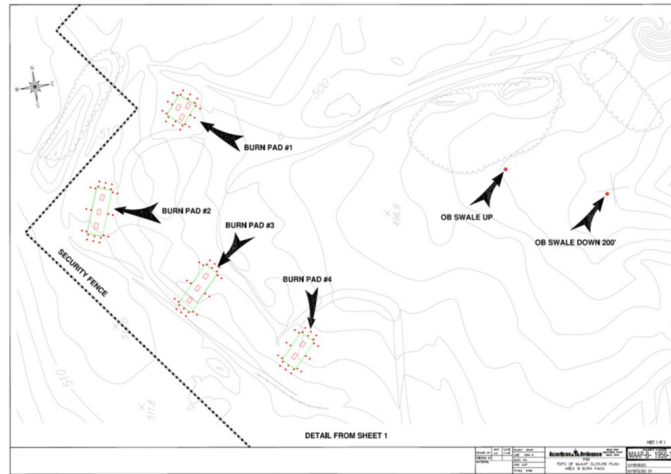
AERIAL VIEW OF BURN PANS AND PADS BEFORE REMOVAL

*Diagram numbers refer to sampling diagrams used to show sample locations in the final closure report



Burn Pans on Pad 1 Before Removal Project

Public Meeting Presentation Slides- Class 2 Modification Request: Continued



SAMPLING LOCATIONS ON TOPOGRAPHIC MAP

Types of Sampling involved:

- Refractory Material
- Spall (Concrete)
- Under-pad/ Surrounding Soil

SAMPLING ANALYTICAL RESULTS

TABLE 1
MLAAP, OPEN BURN HWMU BURN PAD CLOSURE
Burn Pan Refractory Confirmation Summary Table
EPA I.D. No. TN0210020582

Lab Report Number: 22-326-0017

Test Parameter	Regulatory TCLP Decon/Clean Criteria	Collection Date	Refractory Material
Explosives, Total (8330)	Various	11/19/2022	ND
RCRA Metals, TCLP (7470A/60108)	Regulatory TCLP Decon/Clean Criteria	Collection Date	Refractory Material
Arsenic	5	11/19/2022	ND
Barium	100	11/19/2022	ND
Cadmium	1	11/19/2022	ND
Chromium	5	11/19/2022	ND
Lead	5	11/19/2022	ND
Selenium	1	11/19/2022	ND
Silver	5	11/19/2022	ND
Mercury	0.2	11/19/2022	ND

Total Explosives reported in milligrams per liter (mg/L)
TCLP reported in milligrams per liter (mg/L)
NT/ND = Not Tested/Not Detected

*These are two table excerpts from the closure report. 6 tables of analytical results were in the final closure report.

TABLE 4
MLAAP, OPEN BURN HWMU BURN PAD CLOSURE
Soil Confirmation Table - Under Pad Soil
EPA I.D. No. TN0210020582

Lab Report Numbers: 23-068-0056 and 23-110-0122

Test Parameter	USEPA RSL Residential Soil (TH-1E-06, HQ-1.0) mg/kg	Collection Date	UP-C-P1 Composite	UP-C-P2 Composite	UP-C-P3 Composite	UP-C-P4 Composite
Explosives, Total (8330)	Various	3/7/2023	ND	ND	ND	ND
Metals, TCLP (8220) / (7470A)	Regulatory TCLP Decon/Clean Criteria	Collection Date	UP-C-P1 Composite	UP-C-P2 Composite	UP-C-P3 Composite	UP-C-P4 Composite
Barium (only CDC detected)	100	3/7/2023	0.886	0.873	0.729	0.556
Metals (8220)	USEPA RSL Residential Soil (TH-1E-06, HQ-1.0) mg/kg	Collection Date	UP-C-P1 Composite	UP-C-P2 Composite	UP-C-P3 Composite	UP-C-P4 Composite
Arsenic	7.2	4/19/2023	0.000	0.000	0.000	0.000
Antimony	31	4/19/2023	ND	ND	0.539	ND
Azine	8499 (1.0E+06)	4/19/2023	0.23	0.76	5.90	2.05
Barium	15,000	4/19/2023	62.3	51.4	54.6	71.3
Cadmium	7.1	4/19/2023	0.187	ND	0.151	ND
Calcium	None	4/19/2023	2760	1380	1400	562
Chromium	100,000 (1.0E+05)	4/19/2023	34.8	9.48	12.2	4.89
Cobalt	20	4/19/2023	4.76	4.30	4.25	3.66
Copper	3,100	4/19/2023	17.0	14.2	10.9	3.35
Lead	400	4/19/2023	35.1	22.6	7.72	3.60
Manganese	5,000 (5.0E+04)	4/19/2023	278	147	251	128
Mercury Method 7470A	11.0	4/19/2023	ND	ND	ND	ND
Nickel	1,500	4/19/2023	35.2	6.38	9.19	3.41
Perchlorate	98	4/19/2023	688	151	687	344
Selenium	100	4/19/2023	ND	ND	0.617	ND
Silver	100	4/19/2023	ND	ND	ND	ND
Sulfur	None	4/19/2023	42.3	61.0	47.3	ND
Thallium	0.75	4/19/2023	ND	ND	ND	ND
Vanadium	300	4/19/2023	21.0	17.8	22.2	9.21
Zinc	24,000	4/19/2023	53.3	20.0	26.8	9.40

CLOSURE ACTIVITIES



- After ceasing hazardous waste treatment, MLAAP began planning and implementing closure activities for the burning ground area.
- In 2022, the burn were flashed as a decontamination measure.
- Subsequently, the burn pans were recycled as scrap metal and the concrete pads underneath were removed and disposed of onsite as seen in the bottom picture

Public Meeting Presentation Slides- Class 2 Modification Request: Continued

BEFORE AND AFTER CLOSURE - AERIAL PHOTOS



Image Taken- March 01, 2022

Image Taken- July 24, 2023

CLOSURE REPORT

- Upon meeting the closure criteria in TNHW-153's closure plan for the BG, MLAAP developed a closure report to submit to TDEC's Hazardous Waste Permitting team.
- The finalized report was submitted on May 6, 2024

REQUEST TO REMOVE BURNING GROUNDS FROM TNHW-153

On June 4, 2024, MLAAP requested to remove the burning ground from TNHW-153 in a Class 2 Modification Request to TDEC.

4 June 2024

A public notice for this modification, dated Oct 1, was developed and distributed by MLAAP in collaboration with TDEC.

1 Oct.

A 60-day public comment period is in effect from October 1- November 30, 2024.

1 Oct. - 30 Nov. 2024

Public Meeting Presentation Slides- Class 2 Modification Request: Continued

GOING FORWARD

- MLAAP expects to remove the burning grounds from TNHW-153 to officially close the burning grounds site.



COMMENTS, QUESTIONS, & MORE INFO?

- To submit public comments: please contact Ms. Beverly Philpot, Hazardous Waste Program Manager, located at DSWM's Central Office at the Davy Crockett Tower, 7th Floor, 500 James Robertson Parkway, Nashville, TN 37243, phone (615-795-1188), fax 615-532-0938 or email Beverly.Philpot@tn.gov.
- To request further information and/or have questions: please contact William Corrigan, Army Environmental Protection Specialist, at (731) 686-6911.

O-2(f) Public Notice for Closed Hazardous Waste Unit(s)- Notice of Final Decision for Class 2 Modification:

The Mirror Exchange, Tuesday, October 28, 2025

Page 17

NOTICE OF FINAL DECISION ISSUANCE OF A CLASS 2 PERMIT MODIFICATION TO MILAN ARMY AMMUNITION PLANT.

The Tennessee Department of Environment and Conservation (TDEC) Division of Solid Waste Management (DSWM) has issued a Class 2 Permit Modification to the Milan Army Ammunition Plant (MLAAP) facility. MLAAP (EPA ID TN0210020582) is located at 2280 Highway 104 West, Milan, Tennessee 38358. This decision follows a 60-calendar day Public Notice comment period which ended November 30, 2024. In addition to the 60-day Public Notice comment period, MLAAP held a Public Meeting on October 23, 2024, at the Milan Public Library in Milan, TN. No comments were received from the public.

The Class 2 Permit Modification removed the Open Burn Unit as a permitted Subpart X Thermal Treatment Unit from the Permit and the Permit Attachment(s). The Open Burn Unit was closed in accordance with the Permit condition(s) and the Permit Closure Plan. The permit allows the facility to conduct thermal treatment of energetic wastes within the Open Detonation Unit at a maximum capacity of 500 pounds (lb) Net Explosive Weight (NEW) per pit (20 pits) per day for a total maximum capacity of 10,000 lb NEW per day.

Corrective action conditions for the Solid Waste Units (SWMUs) and Areas of Concern (AOC) are included as part of the permit. The conditions of the permit require that any future and existing SWMUs or AOCs be evaluated for potential release and remediation, as necessary. The conditions require notification of imminent hazards, and when applicable, compliance with the requirements developed under land disposal restrictions and organic emission standards.

The Class 2 Permit Modification is issued under the authority of the Tennessee Hazardous Waste Management Act of 1977, as amended, Tennessee Code Annotated, Section 68-212-101 et seq., and Rule Chapter 0400-12-01, Hazardous Waste Management. The permit modification is effective as of October 27, 2025, and shall remain in effect unless continued, revoked and reissued, or terminated under applicable regulations.

Electronic copies of the permit modification are available online at [Waste Notices & Hearings](#) Public Notices- Informational Section, and at the DSWM Central Office, Davy Crockett Tower 7th Floor, 500 James Robertson Parkway, Nashville, Tennessee 37243 (615-532-0780). A paper copy of the permit modification and supporting documents are available for public inspection at the TDEC, Jackson Environmental Field Office, 1625 Hollywood Drive, Jackson, Tennessee 38305.

TDEC is an Equal Employment Opportunity/Affirmative Action (EEO/AA) employer. TDEC does not unlawfully discriminate on any basis prohibited by applicable law in any of its programs, services, or activities.

EEO/AA/ADAAA inquiries or complaints may be directed to the ADAAA Coordinator, TDEC HR Division, at 615-532-0200. Hearing-impaired callers may use the Tennessee Relay Service (800-848-0298).

If it is hard for you to read, speak, or understand English, TDEC may be able to provide translation or interpretation services free of charge. Please contact 615-532-0780 for more information.

If you would like to receive notices like this directly, contact the Public Participation Officer in DSWM's Central Office for a Mailing List Request Form. Email Solid.Waste@tn.gov or call 615-532-0963.

RIGHTS OF APPEAL

The administrative and judicial review of this final permit is pursuant under the Tennessee Uniform Administrative Procedures Act, T.C.A. Sections 4-5-317 and 4-5-322 and the Hazardous Waste Management Act, T.C.A. §68-212-113 and Tennessee Rule 0400-12-01-.07(7)(k).

NOTICE ISSUED: **October 28, 2025**

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O-2(g) Newspaper Publication Invoice- Notice of Final Decision for Class 2 Modification:

The Mirror Exchange
P.O. Box 549
Milan, TN 38358
(731) 686-1632

Date	Advertisement	Price
Oct. 28, 2025	Notice of Final Decision	\$1,050.00

O-2(h) Certified Mail Receipt for Mail Sending Proof of Public Notice Issuance- Notice of Final Decision for Class 2 Modification:

7020 0090 0000 2779 1352

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
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For delivery information, visit our website at www.usps.com®.

Nashville, TN 37243

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PS Form 3835

TDEC-DSWM
Davy Crockett Tower, 7th Floor
500 James Robertson Parkway
Nashville, TN 37243

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0356
OCT 30 2025
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